SMITHSONIAN INSTITUTION
INSTITUTE OF SOCIAL ANTHROPOLOGY
PUBLICATION NO. 11

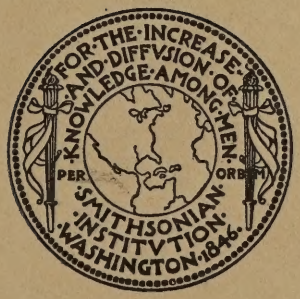
QUIROGA

A MEXICAN MUNICIPIO

by

DONALD D. BRAND

assisted by JOSÉ CORONA NÚÑEZ



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DONALD D. BRAND

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Prepared in Cooperation with the United States Department of State as a Project of the Interdepartmental Committee on Scientific and Cultural Cooperation

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LETTER OF TRANSMITTAL

SMITHSONIAN INSTITUTION,
INSTITUTE OF SOCIAL ANTHROPOLOGY,
Washington 25, D. C., April 29, 1949.

SIR: I have the honor to transmit herewith a manuscript entitled "Quiroga: A Mexican Municipio," by Donald D. Brand, and to recommend that it be published as Publication Number 11 of the Institute of Social Anthropology.

Very respectfully yours,

GEORGE M. FOSTER, *Director.*

DR. ALEXANDER WETMORE,
Secretary of the Smithsonian Institution.

PUBLICATIONS OF THE INSTITUTE OF SOCIAL ANTHROPOLOGY

No. 1. Houses and House Use of the Sierra Tarascans by Ralph L. Beals, Pedro Carrasco, and Thomas McCorkle. x+37 pp., 8 pls., 20 figs. 1944.

No. 2. Cherán: A Sierra Tarascan Village, by Ralph L. Beals. x+225 pp., 8 pls., 19 figs., 5 maps. 1946.

No. 3. Moche: A Peruvian Coastal Community, by John Gillin. vii+166 pp., 26 pls., 8 figs., 1 map. 1947.

No. 4. Cultural and Historical Geography of Southwest Guatemala, by Felix Webster McBryde. xv+184 pp., 47 pls., 2 figs., 25 maps. 1947.

No. 5. Highland Communities of Central Peru, by Harry Tschopik, Jr. viii+56 pp., 16 pls., 2 maps. 1947.

No. 6. Empire's Children: The People of Tzintzuntzan, by George M. Foster assisted by Gabriel Ospina. v+297 pp., 16 pls., 36 figs., 2 maps. 1948.

No. 7. Cultural Geography of the Modern Tarascan Area, by Robert C. West. vi+77 pp., 14 pls., 6 figs., 21 maps. 1948.

No. 8. Sierra Popoluca Speech, by Mary L. Foster and George M. Foster. iii+45 pp. 1948.

No. 9. The Terena and the Caduveo of Southern Mato Grosso, Brazil, by Kalervo Oberg. iv+72 pp., 24 pls., 2 charts, 4 maps. 1949.

No. 10. Nomads of the Long Bow: The Siriono of Eastern Bolivia, by Allan R. Holmberg. iv+104 pp., 7 pls., 4 charts, 1 map. 1950.

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Quiroga: A Mexican Municipio

By Donald D. Brand

INTRODUCTION

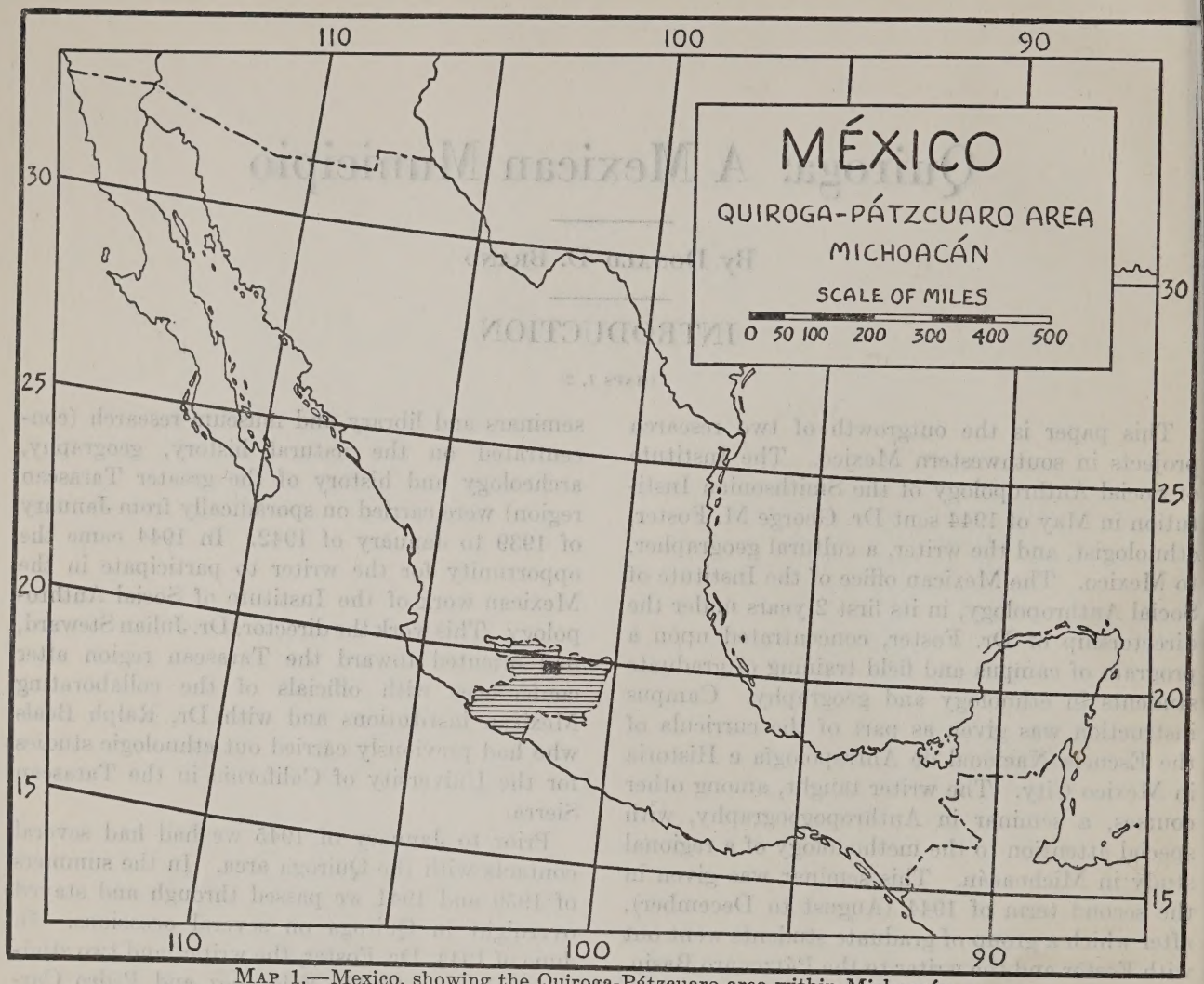
(MAPS 1, 2)

This paper is the outgrowth of two research projects in southwestern Mexico. The Institute of Social Anthropology of the Smithsonian Institution in May of 1944 sent Dr. George M. Foster, ethnologist, and the writer, a cultural geographer, to Mexico. The Mexican office of the Institute of Social Anthropology, in its first 2 years under the directorship of Dr. Foster, concentrated upon a program of campus and field training of graduate students in ethnology and geography. Campus instruction was given as part of the curricula of the Escuela Nacional de Antropología e Historia in Mexico City. The writer taught, among other courses, a seminar in Anthropogeography, with special attention to the methodology of a regional study in Michoacán. This seminar was given in the second term of 1944 (August to December), after which a group of graduate students went out with Foster and the writer to the Pátzcuaro Basin. Here it was decided to divide the party into ethnologists under Foster working Tzintzuntzan and Santa Fe, and the writer, assisted by José Corona Núñez, studying the geography of the area around Quiroga.

This field work continued a project which the writer had begun in 1939. In that year a small group of advanced students at the University of New Mexico was directed in a regional archeogeographical survey of areas mainly within the presumptive fifteenth and early sixteenth century Tarascan realm or region. This work was continued in the summer of 1941 with special attention to northwestern Michoacán (Cojumatlán and Sahuayo) and to a sector of the middle Balsas (San Miguel Totolapan to Santiago Conguripo) where we had surveyed previously. Campus seminars and library and museum research (concentrated on the natural history, geography, archeology and history of the greater Tarascan region) were carried on sporadically from January of 1939 to January of 1942. In 1944 came the opportunity for the writer to participate in the Mexican work of the Institute of Social Anthropology. This work the director, Dr. Julian Steward, had oriented toward the Tarascan region after conferences with officials of the collaborating Mexican institutions and with Dr. Ralph Beals who had previously carried out ethnologic studies for the University of California in the Tarascan Sierra.

Prior to January of 1945 we had had several contacts with the Quiroga area. In the summers of 1939 and 1941 we passed through and stayed overnight in Quiroga on several occasions. In June of 1944, Dr. Foster, the writer, and two student assistants (Pablo Velásquez and Pedro Carrasco) made a rapid tour of the present Tarascan area from Pátzcuaro and Uruapan to Apatzingán, Tancítaro, and Charapan. In July of the same year the writer renewed his work in the museums, libraries, and archives of Morelia, and spent some time in the Pátzcuaro Basin. On December 27 we commenced field work in Michoacán, and January 2, 1945, we located in Quiroga.

Several reasons led to the selection of the town and municipality of Quiroga as the center for a geographical study. It had been decided earlier to concentrate our studies within the Lake Pátzcuaro Basin, so our field for selection was confined to the four lake municipalities. The town of Quiroga and its dependent ranchos is made up entirely of Spanish-speaking whites,



MAP 1.—Mexico, showing the Quiroga-Pátzcuaro area within Michoacán.

mestizos, and highly acculturated Tarascan Indians. This promised better cooperation from the inhabitants, who would not suspect and resent our intrusion and our questionings so much as would the people of less acculturated Tarascan villages. On the other hand, Quiroga (as Cocupao) had been a pure Tarascan village during much of the Spanish colonial period, and Tarascan was still spoken as the mother tongue by the inhabitants of an entire ward or *barrio* into the nineteenth century. Furthermore, the Tarascan villages of Santa Fe de la Laguna (about 2¼ miles distant), San Jerónimo Purenchécuaro, and San Andrés Zicróndaro, had been attached administratively to Quiroga for more than a century. Thus, with headquarters in Quiroga, we had hopes of being accepted by the community, while maintaining contacts with a considerable gamut of economies and stages of acculturation.

Another reason was the excellent transportation facilities. Quiroga is situated on the main western national highway, No. 4, from Mexico City to Guadalajara, and is at the junction of the branch leading to Pátzcuaro and Tacámbaro. This nodal position in a communications network is not new. Before the coming of the paved highway, and of the earlier railroad along the west side of the lake, Quiroga had been a great mule-train center, with many *fondas* and *mesones*, and with muleteers who went frequently to the *tierra caliente*, the Costa Grande of the Pacific, Guadalajara, Guanajuato, etc. Even earlier, in colonial and prehistoric times, an important road led from Pátzcuaro and Tzintzuntzan through Quiroga to Copándaro,

Cuitzeo, Huango, Puruándiro, and other frequented thermal springs, rich haciendas, great convents of the Franciscans and Augustinians, and frontier posts against the "Chichimec" enemies of the Tarascans.

The political and religious history of Quiroga also promised much. It had been a *barrio* of Tzintzuntzan in Tarascan times, and was among the lands held for a time by Cortez himself. The village of Cocupao was one of the earliest congregations in Mexico (dating from the 1530's); and it had a long history of dissension with Santa Fe de la Laguna (the hospital founded by Don Vasco de Quiroga, *oidor* of the second *audiencia*, and later first resident bishop of Michoacán), with Bishop Quiroga himself, and with Juan Infante (usurper *encomendero* of many lake pueblos). Also, the church and mission of San Diego de Cocupao (for 2½ centuries a *visita* of Tzintzuntzan) was one of the oldest Franciscan establishments in Michoacán. Toward the end of the eighteenth century Cocupao became independent of Tzintzuntzan politically, and began to dominate the northern lobe of the Pátzcuaro Basin. Land disputes with Santa Fe, Tzintzuntzan, and the neighboring haciendas of Tecacho and Atzimbo to the north and east, promised interesting sidelights on landholdings and the relationships of *congregación*, *república de Indios*, *hospital*, hacienda, etc. During the War for Independence, the Wars of Reform, the French Intervention, and the later revolutionary periods, Quiroga was the scene of many interesting events. Two examples are: the great liberal governor, Melchor Ocampo, and his associates often met in Cocupao prior to the Wars of Reform, and this led to changing the name to Quiroga; and the "Cristero" movement began in the 1870's in the mountain country not far from Quiroga. At one time or another Quiroga has functioned as the seat or *cabecera* of practically every type of State or department subdivision that has existed in Michoacán. All this promised a much richer archival background than for any other community in the basin excepting Pátzcuaro itself. Also, the parish books of births, marriages, and deaths extend back into the eighteenth century, which is quite rare in a town as small as Quiroga. The books of the civil registry extend back to the commencement of such registry in the 1860's, although with many lacunae produced by fire, theft, and destruction by bandits and revolutionaries. It is no exaggeration to state that among records kept locally, in Morelia, and in Mexico City, Quiroga and its jurisdiction is better documented than any other community of the area excepting Pátzcuaro.

On the geographic side there was much to commend Quiroga. Tzirate, the highest mountain in this part of the state, constitutes the northern limits of the Pátzcuaro Basin and of the municipality of Quiroga. Here we had a transect from lake level and lowland fields to the fir-clad heights of this old extinct volcano. The entire range of local rocks, from Tertiary andesites to possibly the most recent volcanoes and lava flows in the basin, is revealed in the space of a few miles. Also, because of the greatest elevational range in the basin and the accompanying variety in climates, rocks, and land forms, the Quiroga area promised the greatest variety of soils, plants, and animals.

The economy also is quite varied. Agriculture is basic, and embraces growing of vegetables and fruits with irrigation, *temporal* raising of cereals and legumes, pasturing of livestock, and keeping of poultry, swine, and bees. Although near the lake, Quiroga lacks fishing, duck hunting, and weaving of mats from tules. However, the pueblos attached to Quiroga (Santa Fe, Purenchécuaro, and Ziróndaro) stress these forms of economy. No pottery is made in Quiroga, but there is an ancient industry of lacquer work and wood working; and a recently established chair industry has become the most important form of handicraft in the area. The forests of the area are utilized not only for the wood needed in the above-mentioned crafts, but also for charcoal, firewood, turpentine, and a little lumber. There is no mining, but mining is not a part of the economic pattern in the Tarascan lake and mountain country. These, and other minor reasons, prompted us to select the Quiroga area for study.

At the commencement of our work we set up three objectives. One was to make as complete an inventory of the natural resources of the area as possible. Another was to obtain all possible information concerning the history of man in the area. The third objective was to secure a fairly complete picture of the contemporary scene. The ultimate goal was to amass sufficient information to describe a Mexican town and municipality (upon the background of natural environment

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Map 2.—The north Michoacán region and adjoining areas.

and historical development) so that people in other Mexican towns and in foreign lands might know how this community made a living, what the people were like, how they governed themselves, their relationships with the State and Federal Governments, their education, their religion, their recreation, what they ate, from what diseases they suffered, what kinds of houses they lived in, the settlement patterns made by the groupings of the houses, trade and other external contacts, and the dozens of other items that make up the life and actuality of a community or people. A part of the goal was the determination and description of how a pagan Tarascan village had become converted into a Christian Spanish-speaking mestizo town.

To the best of our knowledge, no other such study of a Mexican community exists. There are numerous studies of Mexican communities, but they stress history, or ethnology, or economics, or physical anthropology, or nutrition, or merely relate a visitor's experiences and reactions. Examples are: Redfield's Tepotztlán and Chan Kom, Dickens' Galeana, Storm's Uruapan, Parson's Mitla, and Toussaint's Pátzcuaro. The work on El Valle de Teotihuacán edited by Gamio comes the closest of any study to providing a fairly complete picture of a Mexican community, but various aspects (principally the natural environment, and the political nexus) have been slighted. Our own study is far from perfect, and is purposely deficient along sociologic lines, since Dr. Foster and his group were stressing those aspects in their study of nearby Tzintzuntzan. We have endeavored to stress those elements most commonly neglected or slighted by geographers, anthropologists, and sociologists.

It may serve some useful purpose to outline our field procedure, and narrate some of our experiences. We set up headquarters on January 2, 1945, in a local hotel which once had been the home of the richest citizen of Quiroga. Then we presented our papers and credentials to the *presidente municipal* (president of the township). The first month was devoted mainly to "learning the lay of the land." We walked over every road and public trail in the area, climbed all the higher mountains and hills, collected plant and rock specimens, took elevations and orientations, and took photographs and notes of the various features of the natural landscape. Also, we endeavored to convince the inhabitants that we were sincere, honest, and harmless individuals who were objectively interested in the area and the life of its inhabitants. After we had made a number of acquaintances and friendships we learned that we had been accused of being such diverse things as Communists, Yankee imperialists, Protestant missionaries, fifth columnists, spies, agrarian engineers planning to seize certain properties, and governmental employees obtaining information in order to increase taxes. All of this was despite the fact that the writer had a United States special passport, and letters of recommendation from Federal officials in Mexico City, the Governor of the State, and the Archbishop of Morelia, and despite the fact that his assistant (Prof. José Corona Núñez) was a native of a town less than 40 miles distant, had been trained in an Augustinian seminary, and had been a well-known and honored teacher in the Michoacán school system. Fortunately, we soon made the acquaintance of Don José Medina Gaona, the local postmaster and a native of Quiroga, who was an educated and traveled gentleman. Through his friendship and aid, and through the genial personality of our assistant, we gradually overcame most of the suspicion and passive opposition which had greeted us. However, we continued to be circumspect in our actions and questions.

We had hoped to use some survey instruments to make a base map of the area, including natural features and field boundaries, but we soon discovered that we could not use the instruments and retain the confidence of the farmers. When we took a general census of the area we purposely omitted all questions concerning names, religion, real-estate holdings, valuations, and similar topics. This did not materially reduce the usefulness of our census, since it is second nature in Mexico (as well as elsewhere) to give consciously inaccurate information on the latter topics even to official census takers and tax officials. The census constituted the core of our cultural study of the area. We personally visited every house and family in Quiroga and its six dependent ranchos at least once, and most of them twice or more times. In the general census we obtained for every house and every family the following information: location (quarter, block, street, number); the front dimensions of the house; nature of road, street, and sidewalk; number of stories, windows, and doors;

material of roof, walls, and windows; form of the roof; surface finish of the front wall; number of rooms and for what they were used; nature of floor; toilet and bath facilities; yards, gardens, orchards, fields; number and kind of all economic and ornamental trees and shrubs; kinds of flowers; number and kind of all domesticated animals, including pets; nature of water supply; materials used for cooking and illumination; wagons, automobiles, sewing machines, and radios; number of families, and number and sex of adults and children within each family; where born; literacy; individuals who had been in the United States; languages spoken; and occupation. In addition to the general census, several special censuses were taken (on the basis of the information in the general census)—both complete and sampling. We attempted to revisit and obtain specific detailed information from all of the gainfully employed; e. g., the bakers, *arrieros*, carpenters, painters, butchers, shoemakers, etc. Also, special censuses were made of the schools, mills, soap and candle factories, tanneries, brick and tile kilns, etc. Sampling censuses were taken of kitchen equipment, sleeping accommodations, foods, consumption of maize, etc.

While carrying out the various censuses, we periodically revisited the entire area in order to check on seasonal developments in the vegetation, agriculture, forest exploitation, etc. At the end of our first field period, January through June of 1945, we had accomplished about two-thirds of our program. Because of academic commitments we were forced to return to Mexico City for the summer and fall, but we returned to complete our work in a short session from the middle of December 1945, to the middle of February 1946. Unfortunately, the hiatus from July to November excluded a personal check on the seasonal changes of an entire year, but we were able to fill in most of the desired information with data given us by a number of the more observing citizens of the area. In our second field session, in addition to the writer and Corona Núñez, another of our former students from the Escuela Nacional de Antropología e Historia assisted us in all phases of our work. This was Prof. Pablo Velásquez Gallardo, a Tarascan native of Charapan, former assistant to the linguist Swadesh and the zoologist Hall, and former teacher in the Michoacán school system. Velásquez was especially helpful in ascertaining Tarascan names for various items, and in interpreting various indigenous elements in the culture.

Besides filling in the gaps in our previously acquired data, we spent much of our second session in visiting the ranchos and in abstracting the various local records. The municipal tax rolls for the past 40 years were examined to get an idea of sizes of land holdings, declared valuations, changes in valuations and ownership, methods of land description, etc. A few private titles from the eighteenth century were abstracted; and the title of the *congregación* (dating back to 1534), with later confirmations and changes, was copied in its entirety. In the Agrarian Office in Morelia we copied everything available on the *Comunidad de Indígenas de Quiroga*, including the various litigations with Santa Fe, Atzimbo, and Tzintzuntzan—which included much information on landholdings and boundaries. Also, we abstracted the information concerning the *ejido* of Quiroga. All records available in the municipal palace were examined, and most of them were abstracted. From the treasurer's office we obtained data on all the current imposts, sources of income, and expenditures. The incidence and nature of crimes, and also records of transfer of properties, were obtained in the office of the *juzgado menor*. The secretary's office provided us with broken records covering the history of municipal administration during the past 80 years, including such varied items as the elected officers, changes in street nomenclature and house numbering, installation and upkeep of illumination, market fees, registry of brands, bandit raids, records of the municipal slaughterhouse, water supply, etc. In the *registro civil* we abstracted records covering births, marriages, and deaths from the 1860's through 1945. These records afforded us interesting information as to birth rates, death rates, causes of death, family and baptismal names, longevity, population movement, age at time of marriage and of first child, proportion of males to females, etc. Similar records in the Quiroga parish house, as kept by the various curates, were even more valuable since they were more complete, and extended back into the Spanish colonial period when different books were kept for the various races and castes. One interesting disclosure was that Quiroga, like hundreds of other Mexican com-

munities, once had a large Negro and mulatto population which ultimately became completely absorbed into the mestizo population. During the previous summer, while in Mexico City, we copied the entire detailed 1940 census returns for Quiroga and its ranchos. These records included name, age, religion, and marital status for every individual, which information we had not acquired in our census. Since the Federal 1940 census gave the domicile of each family, we were able to trace various local movements in population by comparison with our 1945 census.

Other items investigated were the local archeology (surface collections were made, some articles were acquired by gift and purchase, and one excavation was carried out), genealogies of several of the older and more important families, the various local cults and special days of the Roman Catholic religion, the church bells and the bell-ringing schedule, literature read and postal movements, local status of *sinarquismo* (which was quite important), political and economic feuds among various groups and parts of town, the electoral system and gerrymandering of the voting districts, the various forms of diversion and recreation, incidence of various popular brands of drinks and cigarettes, important personages born in the area, etc., etc. It is of interest to note that Quiroga has produced eminent physicians, one bishop, poets, merchants, and State and Federal officials. Probably the best known is Dr. Nicolás León—one of Mexico's greatest anthropologists and bibliographers. In February of 1946 the Smithsonian Institution and the Instituto Nacional de Antropología e Historia joined in erecting a bronze commemorative plaque on the house in which León was born.

The data acquired during nearly 9 months in Quiroga, and many months of research in Pátzcuaro, Morelia, Mexico City, and libraries and museums in the United States, has slowly been digested and reduced to written report form. Prof. Corona Núñez, during what little leisure time he could find while serving as chief of the archeologic district of Nayarit, has prepared a chapter on archeology, and is translating the entire report for a Spanish edition. The writer, in the hours available after discharging his duties as professor of anthropogeography and head of the Department of Anthropology at the University of New Mexico (until June of 1947) and as professor of geography at the University of Michigan (June 1947–January 1949), has organized the remainder of the report. (It is planned to present the report in three parts.) The scheme of organization is:

Part I. The physical setting

Tectonics and landforms.
Rocks, minerals, and soils.
Climate and hydrography.
Vegetation and flora.
Fauna.

Part II. Historical development

The archeological record.
The colonial period.
The early independence period 1820–62.
The Middle Period 1863–1910.
The "Revolution" 1911–46.

Part III. Modern Quiroga

Land settlement.
The people.
Names and ethnic origins.
Government.
Economy.
Life in Quiroga.

The entire report, which consists of more than 1,200 pages of typescript, has been written. The monograph which follows this Introduction embodies the third part of our report on Quiroga. Owing to limitation of appropriations, it is probable that the other two parts of the English edition of this report will be published through a nongovernmental medium. This monograph lacks the bibliographic essays, history of research in the Pátzcuaro area, and maps which are incorporated with the other portions of the report.

It is hoped that the completed report, with its history of research, bibliographies, and outline of items covered and research procedures followed, will be of help to others planning a comparable study in some other Mexican *municipio*. This report cannot claim to represent a typical Mexican *municipio* until we have similar studies of dozens of other communities scattered over the country, which will enable us to establish norms. At best Quiroga can be typical only of the middle-sized *municipios* of the "Volcanic Axis" portion of the Mexican plateau. Actually, we did not study all of the *municipio* of Quiroga. This municipality is composed of the mestizo *villa* of Quiroga and its six dependent ranchos, and of three Tarascan pueblos with no dependencies. The two divisions

form two distinct ethnic and economic areas. Since accurate work can be done only leisurely and on foot, lack of time prohibited our covering the three Tarascan lake villages. The lack of complete coverage does not affect the validity of our studies, since the normal *municipio* does not include such divergent elements. Actually, the boundary between the lands of the Villa de Quiroga and of the Pueblo de Santa Fe is locally as important as the limits between the *municipios* of Quiroga and Erongarícuaro or Tzintzuntzan.

One other hope we have for this report: that it may help the inhabitants of the area involved. We have incorporated a number of practical suggestions which occurred to us while living in Quiroga. These vary all the way from means for reducing denudation and erosion, and suggested new species and strains of plants and animals, to methods for assuring a better water supply.

In conclusion of this Introduction, there are many acknowledgments that should be made. Nearly all of the inhabitants of the Quiroga area aided us in one way or another. However, certain people were of outstanding help to us. Among these should be mentioned our postmaster friend Don "Pepe" Medina, who was never too busy to help us in any and all matters; the various municipal officials, especially the two *presidentes*, Heliodoro Anita and José Encarnación Medina, the secretary of the *registro civil*, Rafael Huape, the treasurer, Justo Campuzano, the municipal secretary Alberto Tovar, and the secretary of the *juzgado menor*, Carlos Sánchez; Father José Jesús Olivares (curate since 1936); the recent past presidents, Indalecio Chagolla, Amador Peña, and Onésimo Chagolla; the director of the Quiroga school, Prof. Andrés Natividad Ríos, and the various teachers; the collector of taxes, Antonio Castellanos; many merchants, especially Diego Fuentes Ayala and sons, Manuel Torres, Agustín Ponce, Manuel and Salvador Barriga, Roberto Barriga and sons, Ausencio Pantoja, Pablo Herrera, Ezequiel Medina, Ramón Fuentes, and Manuel Arias; the one resident physician, Dr. Arturo Rascón; Doña Josefina Domínguez, niece of Dr. Nicolás León; and last but not least, our good provider of meals Doña Julia Rivera.

Many others, chiefly officials and scholars in Pátzcuaro, Morelia, and Mexico City, were of great help in providing introductions, making available books, records, maps, and archival material, and in identifying various items of our collections of plants, animals, rocks, and soils. There should be mentioned especially Lic. Alfonso Caso (one time director of the Instituto Nacional de Antropología e Historia and now a cabinet member), Ing. Ignacio Marquina (present director of the Instituto Nacional de Antropología e Historia), Dr. Daniel F. Rubín de la Borbolla (the then director of Escuela Nacional de Antropología e Historia), Mr. Eduardo Noguera (then director of the Museo Nacional), and many other members of the Instituto Nacional de Antropología e Historia who were most helpful with letters of introduction, advice, loans of books and maps, etc. The scientists who aided us in laboratory, museum, and the field have been mentioned specifically in the various sections of the report. Others in Mexico City to whom we owe our deepest thanks include Ing. Alfonso González Gallardo, under secretary of agriculture; Dr. Josué Sáenz, director of the Dirección General de Estadística, who made available to us the 1940 census of Quiroga; Dr. Isaac Ochoterena, director of the Instituto de Biología, and the librarian of the *instituto* Mr. C. Vega; and Ing. Teodoro Flores, director of the Instituto de Geología, and the librarian of the *instituto*, Mr. Martínez. In Morelia we received many courtesies from the Governor of Michoacán and his secretary of government, from his eminence the Archbishop of Morelia and his secretary, from Ing. Jesús Medina Mayorga, president of the Com. Agraria Mixta and delegate of the Depto. Agrario, and from our good friend Lic. Antonio Arriaga Ochoa, director of the Museo Michoacano. The director of the Estación Limnológica de Pátzcuaro, Mr. José Zorilla, made available to us the museum and publications of the station. There are many others who helped us in numerous ways, some of them as importantly as a number of those mentioned by name above, but the list would be entirely too long should we attempt to name them here.

December 1948.

LAND SETTLEMENT

HISTORICAL BACKGROUND

In order to understand the development of the land settlement pattern and of the system of land holdings, it is necessary to review the legendary and colonial history of occupation in the Pátzcuaro Basin together with a discussion of place names and their changes. The principal source for legendary history and pre-Spanish place names is the Relación de Michoacán, presumably written by a Franciscan friar between 1538 and 1541. Some time in the twelfth century a group of seminomadic (Chichimec) Tarascans under Hireticatame separated from the main group in the Zacapu-Naranja area just northwest of the Pátzcuaro Basin. For about four generations they occupied the northern portion of the basin with a center at Vayameo (Bayameo, Uayameo, etc.) near modern Santa Fe de la Laguna—probably at the base of the Cerro de Guayameo just to the northwest of Santa Fe. When these Chichimec Tarascans entered the lake basin they found the region occupied by two groups of sedentary agricultural and fishing Tarascans: an older group (known as islanders because they lived primarily on the islands and coastlands) with a center on the island of Xarácuaro (Jarácuaro) and a younger group (known as snake-Chichimecs) who occupied the lands to the east of Lake Pátzcuaro with their main settlement at Curínguaro (modern San Simón Quirínguaro, which formerly belonged to the jurisdiction of Acuitzio—"place of snakes"). For two generations the most recently arrived Chichimecs wandered over the region in the southern part of the basin, made alliances (first with Xarácuaro and then with Curínguaro), and finally under Tariácuri (whose mother was from Xarácuaro, and whose wife was a daughter of the chief of Curínguaro) settled down at Pátzcuaro. The sons and second cousins of Tariácuri completed the conquest of all of the Pátzcuaro Basin and of most of central and northern Michoacán, divided the nuclear area into three parts (with capitals at Pátzcuaro, Cuyacan or modern Ihuatzio, and Michoacán or modern Tzintzuntzan), and began the conquest of southern Michoacán, Jalisco, and Guanajuato. When the line of Tariácuri became extinct in the third generation, the kingdom was divided between Hiripan of Cuyacan (who was the senior ruler) and Tangaxoan of Michoacán. When Hiripan's son Ticatame died, the primacy moved to Michoacán where Tangaxoan's son Zisispandaquare was ruler. Zisispandaquare extended the Tarascan kingdom into Jalisco, Colima, and Guerrero, defeated the Mexican armies in the east, and divided the Tarascan state into four parts or quarters. His grandson was Tangaxoan Zincicha, who was ruler in 1522 when Michoacán was conquered.

There is no mention of Cocupao (Quiroga) in the Relación. Localities mentioned in the Quiroga area, which can be identified, are: Peñol de Capacureo (known as Peñol de Capacuaro and Cerrito Uarapo in the *títulos* of Santa Fe and San Diego Cocupao; shown on Beaumont and Seler maps as Yrapo; now known as Cerro Huarapo or Cerro de San Miguel); Xenguaro (modern Capula); Teremendo; Xajo (later Jaso and Xaxo, modern Sajo); Santa Fe; Vayameo or Uayameo (at foot of modern Cerro Guayameo); Yzipamuco and many variants (Itziparamuco of colonial times, near modern Cuenembo); and Tariaran or Tariayaran, under the lord Zinzuni, which became the Cuidad de Michoacán of conquest times (modern Tzintzuntzan), and its barrio Yavaro. Among other identifiable places in the general region are: Matoxeo (Matujeo), Sipiaxo (Sipiajo), Vaniqueo (Huaniqueo), Uangao (Huango), Chucándiro, Hetucuaro (modern Tarímbaro), Araró, Cinapecuaro (Zinapécuaro), Vayangareo (later Guayangareo, Valladolid, and Morelia), Matalcingo (Charo), Tiripitio, Tiristarán, Naranja, Zacapu, Puruándiro, Erongarícuaro, Zurumútaro, Pazcuaro (Pátzcuaro), and all of the islands of the lake, as well as Mount Tariácuri back of Tzintzuntzan, etc.

Apparently the general Tarascan people were divided by blood and by position. The related ruling families of Chichimec ancestry and their lesser Chichimec followers (all of Zacapu-Naranja or Sierra Tarascan origin) constituted one blood grouping with no other known name than the Mexicano one of "Chichimec" applied to them by the Spaniards and their Mexicano followers and interpreters. Possibly included with this blood grouping were the "snake-Chichimecs" of Curínguaro, Yzipamuco, Tariaran, etc., whose rulers were much intermarried with the later Chichimecs. The other great blood group was

composed of the aboriginal common people or fishermen and farmers (originally known as *ysleños* or islanders) who became known as Purépecha or plebians. In time the terms "Tarascan" (derived from a Spanish mistake) and "Purépecha" became synonymous and were applied to all individuals of the speech which is now termed "Tarasca" or "Purépecha." After the lake area was fully conquered and pacified, Hiripan and Tangaxoan placed *caciques* (an alien term used by the Spaniards) or lords (*señores*) in all of the pueblos and *barrios* to supervise the collection of wood for the temple fires, to lead the people in time of war, to gather people for the public works, and to take the census and collect tribute. The kings and the *caciques* or lords were also the sacrificial priests. This would indicate that there was an integrated upper class, comprising the royal and noble families of Chichimec ancestry, who also constituted the priesthood, the government, and the leading warriors. Just how the land was divided is uncertain. There is mentioned an official who knew all the land titles and who attended to disputes over lands. Probably the peoples of the pueblos owned and worked certain specific lands, which lands also belonged to the lords through allotment of usufruct. Also, probably there was a feudal hierarchy of lords.

ENCOMIENDAS

When Cristóbal de Olid conquered Michoacán for Hernán Cortez in 1522, a census was made of the pueblos, and one or more pueblos were assigned (*repartimiento*) and the people were entrusted (*encomienda*) to each of a number of the conquerors. Apparently Cortez had assigned to himself all of the pueblos or *barrios* immediately dependent on or belonging to the lord of Michoacán-Tzintzuntzan, which included all of the settlements in the lake region. Cortez, during his period of control from 1522 to about 1528–29, was represented by a Spanish *mayordomo* in Tzintzuntzan who collected the tribute. When Cortez was dispossessed by the first audience, a representative of the audience collected the tribute until about 1531–34 when a *corregidor* was established in Tzintzuntzan to supervise and protect the Indians and collect the tribute. The functions of the *corregidor* were merged with those of the *alcalde mayor* in Pátzcuaro some time between 1542 and 1554. It must be assumed that during all of this time Cocupao paid its tribute to the representative (of Cortez, of the audience, and then of the king) in Tzintzuntzan. However, it is apparent that the royal and noble Tarascan lords continued in possession of their villages, and merely shared the usufruct with the Spaniards. This is indicated in various land titles, from 1522 into the seventeenth century, which show the Puruata, Guanga or Cuinierangari, Paranguarende, and Huitziméngari families (all descended from kings of Michoacán) selling or making grants of lands which comprised most of the territory from the Hacienda of Chapultepec northwestward to San Jerónimo Purenchécuaro. In this connection there is an interesting sequence of probably related facts. In the legendary period a Zinzuni was lord of Itziparamuco, and another Zinzuni was lord of Tariaran (Tzintzuntzan); and these lords were related to the lords of Curínguaro and to the Chichimec lords who finally established their capital in Tzintzuntzan. The descendants of the Tarascan kings, of the above-mentioned family names, were Indian governors of Tzintzuntzan and Pátzcuaro under the Spaniards. Much or all of the lands which became the Hacienda of Itziparamuco in the seventeenth century, and out of which was derived the Hacienda of Atzimbo of the eighteenth and nineteenth centuries, belonged to Don Luis de Castilleja y Paruata and his sisters Mariana and Beatriz in the early part of the seventeenth century. Therefore, it seems possible that the lands that now constitute the eastern parts of the municipalities of Quiroga and Tzintzuntzan were held by the same Indian (and later, mestizo) family from the fifteenth into the seventeenth century.

The *encomienda* system was never very well established in the Pátzcuaro region. After the Cortez period (1522–29), all of the Indians in the basin were tributary directly to representatives of the crown excepting for the Juan Infante period (1539–54). Under some pretext Infante in 1539 obtained a number of the western and northern pueblos of the lake basin, and he continued to hold these pueblos in *encomienda* until Bishop Quiroga in 1554 won a suit which held that all of the villages in the basin were *barrios* or suburbs of the City of Michoacán (Tzintzuntzan, and later Pátzcuaro) and were not subject to separation from the jurisdiction of that city. From the Suma de

Visitas (Paso y Troncoso, 1905) and from Quiroga's lawsuit against Infante we know that among the villages held by Infante were Xarácuaro, Erongarícuaro, and Purenchécuaro, and that attached to Purenchécuaro were Hazcuaro (not identified but probably San Andrés Ziróndaro since it was stated to be on a promontory extending into the lake), Guanimao or Guarameo (probably Santiago Arameo east of present Cuenembo since it was stated to be between Tzintzuntzan and Tiripitio), Chupícuaro, Cutzaro, and Zirandangacho. This would indicate that Infante held all of the lands along the northern shores of Lake Pátzcuaro, excepting those obtained for Santa Fe in 1534 and 1538 by Quiroga. Since the Suma de Visitas lists Capula, Jasso, and Tiripitio as bordering Zirandangacho and the lake pueblos of Juan Infante administered from Xarácuaro, it appears that Cocupao must have been included within the *encomienda* of Infante. We have no records from this period, but probably it made little difference to the inhabitants of Cocupao whether they paid their tribute to the crown or to an individual Spaniard. After 1554 there were no pueblos held in *encomienda* in the Pátzcuaro Basin or in the adjoining areas to the north and east, such as Teremendo, Jasso, Capula, and Tiripitio. Since there were no mines of precious metals in the area, and no *encomiendas* after 1554, it is evident that the colonial history of land settlements and land holdings in the area consists principally of the parts played by the Indian villages, the missionary orders, the Indian nobility, and the Spanish (and later, mestizo) *vecinos* or citizens of Tzintzuntzan, Pátzcuaro, and Valladolid-Morelia.

THE INDIAN VILLAGE OR PUEBLO

At the time of the Conquest the Tarascan Indians were a basically agricultural people distributed in many settlements of various sizes, the smaller of which were attached as *barrios* (*uapatzequa* in Tarascan) to more important places. Location of these settlements was determined by the occurrence of water, wood, and arable land. The remains of two prehistoric "temples" or *yácatas* (literally, mounds or heaps of stones) in the town of Quiroga, various areas of concentrations of potsherds and obsidian knives, and the occasional find of vessels, figurines, grinding stones, mirrors, stamps, beads, and other artifacts throughout the terrain testify to the ancient presence of a number of settlements within the area subject to the modern town of Quiroga. Similar structures and artifacts are to be found throughout the municipality and the entire region. The number, size, and pattern of these prehistoric settlements are uncertain because we made only a limited archeologic survey, and we had the time to excavate only a small area near the Yácata del Calvario in the upper part of Quiroga. From the archeologic evidence, the unpublished and published illustrations to the Relación de Michoacán, and various accounts of the middle sixteenth century, it would appear that the typical settlement consisted of about 38 houses and 190 inhabitants (ranging from 4 houses up to more than 200, and averaging about 5 persons to the house). The isolated homstead did not exist, but the pattern of settlement was open and without evident plan excepting that there was a tendency to cluster around the temple mound or the source of potable water. All settlements had a permanent or nearly permanent source of water near at hand, but only the larger places possessed temples—as indicated by the presence of *yácata* ruins. From the archeologic evidence, and from the maps and records of the sixteenth century, it would appear that there were important settlements, within the Quiroga region, at San Andrés Ziróndaro, San Jerónimo Purenchécuaro, Chupícuaro, Guayameo-Santa Fe, Cutzaro, Huarapo, Cuinario-Quiroga, Calvario-Quiroga, La Tirímicua, Icuácato, Sajo, Arameo-Itziparamuco-Cuenembo, and the original locations of Sanambo and Zirandangacho. All of these settlements were considered to be parts or *barrios* of Tzintzuntzan, and each settlement possessed a number of small dependencies which perhaps were established for the more efficient exploitation of soil, water, woods, and minerals.

After the Spanish Conquest the larger settlements became known as *pueblos de Indios*, and the smaller places were either lumped in with the larger or were called *pueblecitos*. The larger *pueblos de Indios* became the basic governmental and tributary units under the term *república de Indios*, and in these communities the missionary orders established their convents, or if there were no resident friars there would be at least a chapel or small church erected which would be visited periodically. During the sixteenth century the settlement pattern became less open and disperse. This was due primarily to the great reduction in

population produced by the initial Conquest, the later incursion of Nuño de Guzmán 1529–30, and the devastation by introduced diseases. Beginning in the 1530's and culminating in the period 1593–1603, the remnant populations of several contiguous pueblos were brought together or congregated in the central or most suitable locality. Commonly the name of but one of the constituent pueblos would be retained, although Jaso and Teremendo (congregated with several other communities just north of Quiroga in 1603) were known as Jasso-Teremendo throughout the remainder of the colonial period, and the earlier congregated pueblos of Sanambo and Zirandangacho were known as the pueblos of Sanambo-Zirandangacho at the time of their congregation in 1603 with Cocupao. Although the inhabitants might be moved off their lands, they continued to claim and own them legally. It was as a result of the various congregations that many of the pueblos of Michoacán, including Cocupao, claimed considerable territory. These congregations were made in the name of more efficient religious instruction by the comparatively small number of friars available. Every congregated pueblo had a church, and the church became the center of the community in practically every way. As early as 1523 the crown had made regulations concerning new settlements of cities, towns, and other places (*lugares*), which specified that there be a central square (*plaza*) with streets going out from it, and that there be ample public lands at the exits (*ejidos*) to allow for expansion, for the movement of livestock, etc. The 1523 and later regulations were codified and made more explicit in the *Ordenanzas para descubrimientos, nuevas poblaciones y pacificaciones* of Philip II in 1573. Commonly, wherever possible, the settlement was laid out in accordance with the cardinal directions, the main *plaza* was placed in the center, the parish church and local governmental building would front the *plaza*, and streets led away at right angles from the sides and corners of the *plaza*. Usually, however, the rectangular pattern obtained only in the immediate vicinity of the central square. In 1567 the viceroy of Mexico ruled that every *pueblo de Indios* should have 500 *varas* (Spanish yards) of arable land measured toward each of the "four winds" from the last inhabited house on each side of the community. The Spanish landholders managed to have most of the measurements made from the church instead of from the periphery of the settlements, so that many Indian villages had no *ejidos* or arable land outside of the pueblo. Cocupao, for example, was limited at the village exit toward the south by the lands of a *vecino* of Valladolid during much of the sixteenth century. The condition of the Indians became so aggravated that in 1687 a royal cedula raised the radius from 500 to 600 *varas* and insisted that it be measured from the last houses. However, the pressure of white and mestizo landholders was sufficient to have this regulation modified in 1695 so that measurements were made from the church.

The limits, settlement pattern, and properties of Cocupao during the entire colonial period are quite uncertain. Practically all of our information comes from the papers accompanying lawsuits over boundaries with Santa Fe, Tzintzuntzan, and the hacienda which held the lands to the east from the seventeenth into the nineteenth century. The Indian community of Quiroga possesses a notarized copy, made in Morelia in 1837, of all the titles and papers pertinent to the boundaries and claims of Cocupao from 1522 to 1803 which could be located in the archives in Morelia and in the possession of the community. These papers are chiefly the briefs that were drawn up at the time of each lawsuit, which briefs would copy all extant pertinent titles and summarize the actions that had been taken previously. Unfortunately there is no copy but merely a reference to the title of 1522 (granted by Antón Paranguarende to Cocupao) which the audience of Mexico had found valid. The other important documents are the first royal title issued in 1534, the act of congregation of 1603, the 1681–82 act of measuring the legal town site, and the 1714–19 reviews with a statement of the boundaries of Cocupao. Most of the litigation in the colonial period was with Santa Fe; we found nothing in the Cocupao documents concerning controversies with Tzintzuntzan, and we did not have the time to examine the Tzintzuntzan docu-

ments. In 1920, in connection with attempts to reclaim lost lands under the provisions of the 1917 constitution and the agrarian code, the Cocupao documents were copied in the Agrarian Office in Morelia, and copies are on file there and in Mexico City. We made copies of all the material concerning Cocupao–Quiroga, and also Santa Fe and the Hacienda Atzimbo, which were available in the Agrarian Offices in Morelia and Mexico City. We compared all proper names in the typewritten copy of the Cocupao material with the longhand copy of 1837, and also consulted local authorities on the proper form and location of the various places mentioned. Nevertheless, there are many place names that either have gone out of use or are unrecognizable in the forms in which they occur. Because of deterioration of papers many long gaps occur and often important dates and names are missing. At best, this material provides a picture of the source material that is available for many pueblos in Mexico. It is possible that the survey and census of resources and population (ca. 1593–98) and the resultant study and recommendations (ca. 1599–1602) which led up to the congregation of 1603 for Cocupao-Sanambo-Zirandangacho may be in the national archives, but we were not able to locate this material.

In reconstructing the land settlement pattern and history of Quiroga we must begin with the archeologic evidence. Within the area of the modern town there were settlements around the Yácata del Calvario and northwestward to the spring of Petatario in the northern parts of *cuarteles* II and III; in the area from the Yácata del Lindero southward into the western part of *cuartel* II near the Plaza Vieja and on westward to the spring of Atzitzíndaro; around the spring of La Tepóricua and westward past the present cemetery perhaps as far as the present Plaza Principal within *cuartel* III; and along the Arroyo de Quiroga within *cuartel* I. There may have been a settlement in *cuartel* IV in the vicinity of the present parish church and the former Franciscan convent, but the entirety of *cuartel* IV is poor in archeologic finds as compared with the other areas. It is of interest to note that the majority of archeologic finds have been made in areas close to a permanent supply of water. The area of *cuartel* IV is the only one with no springs, seeps, or permanently flowing streams.

The first historic mention of Cocupao is the reference to the title granted in 1522 by Antón Paranguarende, but there are no details. The next mention is the *Título Original y Congregación* of the Pueblo de San Diego de Cocupa granted in 1534 by the second audience in the name of Charles V. There is reference to a statement of congregation drawn up by Pedro Díaz Aguero (*Procurador general de los indígenas de Nueva España*) for presentation to the *audiencia*, but since this is lacking we do not know the actual date of the congregation, nor by whom carried out (probably by Don Vasco de Quiroga, *oidor* of the audience who was in the Pátzcuaro area in 1533–34, or else by Juan de Villaseñor who was sent as an inspector to help the Indians in 1531), nor do we know what pueblos were incorporated in the congregation. The original congregator was more likely Villaseñor than Quiroga since the *título* expressly states that Don Vasco de Quiroga "should not come and take away the lands from the natives of San Diego Cocupa." The title was delivered and the boundaries were paced off and markers established by Judge Bernabé de Cortez and scribe Antonio de Alvarez, both probably of Michoacán-Tzintzuntzan. The witnesses included representatives of Cocupao, Santa Fe, Tzintzuntzan, Capula, and Icuácato; and among those who signed were Antonio Gitziméngari Calzonsi (son of the last Tarascan king, and *regidor* of Michoacán), and Diego Sirauata (governor of Tzintzuntzan). In general the area designated to Cocupao began with the peak of Tzirate to the north, ran south to the lake and Patambicho, eastward to an uncertain point east of Los Corrales, northward along the heights west of Capula and northwest between the Cerro Azul and Icuácato to Tzirate. Essentially this is the modern town of Quiroga and its ranchos without Icuácato but including parts of Santa Fe and Tzintzuntzan (Patambicho, Santa Cruz, Corrales, Los Alamos, Las Pilas, Cuenembo, and El Tigre). The markers were not permanent, since they varied from buried charcoal to planted

cactus. In the following tabulation we give the names of boundary points as they appear in the title of 1534, and their equivalents according to the people of Quiroga at present:

Titulo 1534	*Modern names or presumptive location*
Monte Tzirate Uataro	The mountain El Tzirate.
Cerrito Aramet	Cerrito de las Rosas or Ichapetiro.
Arbol Ucaciret	Cerrito de las Piedras, by *potrero* Tepamal.
Ojo de agua Ytzipararacu	On Mesa de Santa Fe.
Cerrito Uarapo	Cerro Huarapo or San Miguel.
Uaricho Angameo	Somewhere by the lake.
Piedra Tzacapo Casangario in patio of the chapel of Patambicho.	Outskirts of the habitations in the rancho of Patambicho.
Zitzicuaro	Outskirts of Los Corrales.
Yracho	???
Arbol Alamo	Rancho Los Alamos.
Monte Tupusohuato	Loma del Metate near El Tigre.
A stone's throw from the chapel of San Miguel Guarazo	???
Loma Guatzivet chagaricu	Cuesta de las Tres Cabezas near Capula on old road to Morelia.
Monte Yraocojuato	The hill Yrauco, belonging to Sanambo.
Piedra *que echa lumbre* on *camino real* from Pátzcuaro to Chucándiro.	Piedra de La Luna, north of Icuácato.
Monte Tzirate Uato	El Tzirate.

Since representatives of San Juan Icuácato were present, we doubt that the *piedra que echa lumbre* (stone which strikes fire) was the same as the present Piedra de la Luna which is a large imbedded rock on the northwestern limits of modern Icuácato. To back our belief that Icuácato did not belong to Cocupao during the sixteenth and seventeenth centuries is the fact that Icuácato was a *barrio* of the Pueblo of Xaxo or Sajo when it was congregated with Teremendo, Coro, Tzintzimacato, Carupo, San Pedro Chicuácuaro, and Asajo in 1603. There is no mention of Atzimbo or Caríngaro during the sixteenth century, although their present areas fall well within the boundaries outlined above for Cocupao. Although Sanambo is mentioned (along with Zirandangacho, Yaguaro, Ihuatzio, etc.) in 1569 as a *barrio* within the *doctrina* or parish of Tzintzuntzan, we have no idea as to its location during the sixteenth century. Zirandangacho is mentioned as an Infante pueblo of the period 1539–54, and in the maps reproduced by Beaumont and Seler from about 1540 it appears in approximately its present location. Cocupao, in the same maps of about 1540, appears in its present location with reference to the indicated positions of Santa Fe, the Cerro Huarapo, Lake Pátzcuaro, and Zirandangacho.

We can imagine the Quiroga of 1534 as being an aggregation of four or five groups of huts sprawled over the slopes between La Tepóricua and the Arroyo del Cerro Azul on the east and the Arroyo de Quiroga and Atzitzíndaro on the west. Probably in the same year a small church was built (with San Diego de Alcalá as its patron saint) near the site of the present church, which was visited occasionally by Franciscan friars from Tzintzuntzan 5 miles away. The *título* of 1534 provided for the building of a church, and the pronomen of San Diego would indicate that the matter was under way. Although we know that a Franciscan convent dependent on that of Tzintzuntzan was built in the block just east of the present parish church, and that a hospital (Indian community house and not an infirmary) or *guatapera* was constructed where the municipal building is now, probably they were not erected until after the *oidor* Quiroga had become the bishop of Michoacán; i. e., after 1538 and possibly not until after the visit of the Franciscan Ponce in 1586. The friars organized the above-mentioned groups of habitations into wards or *barrios* of the village with a chapel and patron saint for each. Only four names have come down into the nineteenth century (of which only one—San Miguel—is still used), and this tends to confirm our idea that there were only four nuclear communities in Cocupao proper. Besides San Miguel, there were La Ascensión, San Francisco, and San Bartolo. The *barrio* of San Miguel, or, as it is more commonly known, El Calvario, occupies the highest portion of Quiroga in the northern parts of *cuarteles* II and III above the streets known as Comonfort, Olivo,

Cuerno, and Doblado. This would represent the Yácata del Calvario-Petatario group. San Bartolo (also known as *barrio* de los Tecolotes and de los Negros) occupied the area from the hospital and the present Calle Nacional south and west to and across the Arroyo de Quiroga. Its chapel in the early part of the nineteenth century was in block 4 of *cuartel* I. The location of the other two *barrios* is uncertain. La Ascensión most probably was the northeastern one that embraced the Tepóricua area, which would place San Francisco in the center west toward Atzitzíndaro.

In this connection we will mention two apocryphal stories about the foundation of Cocupao. Nicolás León (1887–88), writing in 1884, states that the original settlement was located at the spring La Tepóricua (also known as the Ojo de Agua de Cocupa), and that the name Cocupao was a corruption from Cucupa or Xucupan; and León goes on to discuss the occurrence and meaning of Xucupan on the map or *Lienzo de Jucutacato* and the visit of the inspector-general Ponce to the village of Tacupan in 1586. At present no one in Quiroga admits the possibility that the original settlement was at La Tepóricua, and some of the old Indian residents say that the original settlement was around the Yácata del Calvario, and others claim that the earliest settlement was in the region of the hospital or *guatapera*, and that they were slowly dispossessed and forced northward into the *barrio* of San Miguel during the middle part of the nineteenth century. As for Xucupan or Tacupan, historians cannot agree on the meaning of the Lienzo de Jucutacato, although one school insists that it represents the advance of Augustinian missionaries into Michoacán; in which case it cannot apply to Cocupao since the Quiroga region was Franciscan throughout the colonial period. León, and others after him, have accepted the identity of the *pueblecito* of Tacupan visited by Ponce in 1586 with the pueblo of Cocupao, but they did not examine the Relación de Alonso Ponce and other contemporary records critically. Ponce expressly states that on his way from Pátzcuaro to Tzintzuntzan he passed by an important wheat mill or *molino*; that one-quarter of a league past the *molino* he encountered the little settlement of Tacupan, that the same day he continued on to Tzintzuntzan, and that after leaving Tzintzuntzan he followed the lake closely leaving Santa Fe to his right as he proceeded to Purenchécuaro. When the Spaniards arrived in Michoacán, Lake Pátzcuaro completely encircled the present Cerro Blanco or Apohuato, and during colonial times the road from Pátzcuaro to Tzintzuntzan had to circle far to the east so as to avoid the lake and swamps which extended nearly to the present Hacienda Chapultepec. Furthermore, there are numerous records of the settlement of San Antonio Tacupan which in the seventeenth century became the Hacienda de San Antonio Chapultepec and included the wheat mill or Molino de San Rafael. Undoubtedly the location of Ponce's Tacupan was the present San José about half a mile north of the mill within the ex-Hacienda of Chapultepec.

The other story we obtained from Don Agustín Ponce, one of the older residents who speaks Tarascan, which he learned as a child while living in Santa Fe. According to this story, after Don Vasco de Quiroga had founded Santa Fe and had given it lands (1534), an old widow stopped Don Vasco as he was riding past, knelt before him (in a position called *cucutaco*, which has been corrupted into Cucupao), and begged him for a grant of land to support her family. Don Vasco promised to give her all the land within the radius of a slingshot (*honda*) throw, but she was weak in her throw, so Don Vasco arbitrarily gave her all the lands from those of Santa Fe to La Tepóricua. Then the first settlement was made in what is now the *barrio* of San Miguel. Considering the testimony of the *títulos*, the whole story seems to be a patchwork of fact and fancy. Furthermore, to derive Cocupao (which means place of the *corcova* or hump or humpbacked, in good Tarascan) from *cucutaco* (squatted, or *en cuclillas*, on haunches with elbows on the knees) seems rather farfetched. Practically all authors who have dealt with Tarascan place names give the "hump" derivation of the name. However, the reason for assigning such a name seems rather obscure. It is possible that the place was named after some early humpbacked resident, just as one of the origins of the name of a nearby town (Coeneo) is given as the place of the person with *tisis* or tuberculosis. It is more likely that the name was derived from some salient natural feature, such as the Cerro de Huarapo which (according to the Beaumont map) already in the sixteenth century possessed a humpbacked profile; and Romero (1863) claims that the name was derived from a hill with a hump. Torres (1915, vol. 3) gives a garbled form of the

story we obtained from Ponce. According to Torres, Cocupao means "a stone's throw" (*tiro de piedra*), and was given because each landless Indian in the area threw a stone to establish the extent of his property. Torres probably had noticed, in scanning colonial titles, that often there was mention of throwing in connection with the granting of title to a piece of property. Actually this was an old European custom in which the person about to be invested with a piece of property would pick up a handful of earth and a handful of grass or herbs and would walk over the property. The Santa Fe title gives the Michoacán version of this act as follows: the presiding judge took the representative of the Pueblo de Santa Fe by the hand and put him into the newly acquired lands, and the representative then took stones and threw them from one part to another (*tomó las piedras y las hechó de una parte a otra*) and gathered grass and walked over the lands, and was challenged by no one.

During the sixteenth century began the long series of controversies with Santa Fe. As has been mentioned, the *oidor* Don Vasco de Quiroga about 1533–34 founded the Pueblo Hospital de Santa Fe de la Laguna. According to the 1538–39 title of Santa Fe (in the 1803 notarized copy), about 1533 Don Pedro Guanga (Governor of Tzintzuntzan) and his wife Doña Inez gave to the proposed hospital lands which occupied the triangle from the peak of Tzirate to the lake at Chupícuaro, along the lake to a point opposite the Peñol de Capacuaro (also Cocontal, Toscontal, and Huarapo), and northward up the valley of Patacazcuaro (which contains the present Potrero Grande del Lindero and the drainage of Atzitzíndaro) to the Tzirate. A few years later Don Pedro added lands to the south and east of the Cerro Capacuaro or Huarapo, extending as far southeast as the *estancia* or cattle ranch of Juan de Villaseñor. This second grant apparently consisted of the lands now known as Sámano (just south of Quiroga town), which were claimed by Santa Fe as late as 1711 (in a dispute with Cocupao and Tzintzuntzan), and which were in the possession of Tzintzuntzan during most of the nineteenth century. The *estancia* of Villaseñor probably constituted the lands which shortly came into the hands of the Cáceres family of Valladolid, and which became the Hacienda de la Tenería in the seventeenth century. Probably this Juan de Villaseñor was the Juan de Villaseñor y Orozco who visited Michoacán in 1531, and later became the great *encomendero* of Huango and Puruándiro to the north, and the ancestor of many famous people, including Father Hidalgo and Emperor Iturbide. The above-mentioned lands were added to and the titles were made ironclad by royal and viceregal cedulas (1535, 1538, 1539) obtained through the influence of Don Vasco de Quiroga. This is an important point, since in all the later colonial history of disputes between Cocupao and Santa Fe, the reviewing officials would acknowledge that Cocupao was entitled to its 500 *varas* in all directions, but they could not get the full 500 toward the west and the south because of the royally backed titles possessed by Santa Fe. Cocupao was in the unfortunate position of being an unimportant pueblo with no powerful advocates, while Santa Fe was the pet project of Vasco de Quiroga who (as *oidor* and later Bishop of Michoacán from 1538 to 1565) was the most powerful individual in Michoacán and one of the most influential in all Mexico and the Spanish possessions. After the death of Quiroga in 1565 Santa Fe continued under the direct administration and protection of the bishops of Michoacán (through their deans and cabildos of the cathedral). Since the Indian pueblo of Santa Fe constituted a parish of the ordinary clergy from its founding, the bishops (who appointed the local priests or rectors) were naturally concerned with preserving the boundaries of Santa Fe and the income from the lands at their maximum.

After the events of the 1530's, there is little of note in the settlement history of Cocupao until the seventeenth century. By the 1590's the ravages of epidemic diseases had so reduced the population that another congregation was necessary. The Indians of the Pueblo de Tzirandangacho e Tzanambo were located in the Pueblo de Santiago adjoining the Pueblo de Cocupao (*junto al de Cucupa*), but they complained that the lands were useless because they were either exhausted or too swampy. The location of the Pueblo de Santiago and these lands is uncertain. Possibly the scribe meant lands within the pueblo of San Diego Cocupao since San Diego is sometimes a variant of Santiago. Furthermore, there is still a swampy area with many little springs between present Zirandangacho and Quiroga.

However, there is a piece of land just south of Zirandangacho by the Arroyo del Salto which is sometimes referred to as the Rancho de San Diego. At any rate, in 1603 Baltazar Dorantes de Carranza (commissioner for the congregating of Indians) and Francisco de Soria (royal scribe for the distributing of lands) reassigned lands to the Indians of Zirandangacho (Sanambo is not mentioned) within lands owned by Alonso de Cáceres of Valladolid (the area now known as La Tenería). Apparently the Indians did not gain actual possession of these lands, because in 1681 we find that (*a*) the Pueblo de Cocupa complained that it did not have the "500 varas utiles" to which it was entitled by law, (*b*) the land titles of Santa Fe were found to be valid, and (*c*) a survey was made with a measured cord and allotments were made in the lands "that had belonged to Alonso de Cáceres." [1]

The allotments made in 1681 to activate the assignments of 1603 were measured with a doubled hemp cord of 50 *varas* length under the personal supervision of Captain Alonso de Alcocer Dábalos, *alcalde mayor* in the province of Michoacán. However, the area was measured as a unit and not into the individual parcels mentioned in 1603. Those parcels had varied from 1 by 40 *brazas* up to 3 by 40 *brazas*, depending upon the size of the family. At maximum this was less than a tenth of an acre per family. Also, to give Cocupao the equivalent of the land to which it was entitled, 1,300 *varas* were measured south from Cocupao. The village of Cocupao was still dissatisfied. In a petition of 1682 to the *audiencia*, Cocupao repeated that it did not have the "500 varas utiles"; that the 1,300 *varas* to the south were in exhausted or swampy ground; that northward it possessed only 250 *varas* along the highway to Teremendo; that to the east there were no lands because of an arroyo, hills, and swampy land; and that there were only 200 *varas* to the west. Later in the year the audience ordered that "500 varas utiles por todos cuatros vientos" be given to Cocupao, as well as effective occupation of the lands assigned at the time of the 1603 congregation. Evidently the recorded assignments, allotments, measurements, etc., of the previous 79 years had not resulted in the actual acquisition of land of any description whatsoever. Finally on August 14, 1682, the *alcalde mayor* had the measurements made "to the four winds" with a cord of 50 *varas* in the presence of witnesses from Cocupao, Santa Fe, Tzintzuntzan, and a representative of Alonso Rodríguez (the renter of the Hacienda de la Tenería which had been established in the lands that formerly had belonged to Alonso Cáceres). It is of interest that one of the two Spaniards who handled the measuring cord was a Manuel Ponce de Rueda who was a member of the Ponce family which owned the lands immediately to the east of Cocupao, but that there was no mention made of a representative of the eastern neighbor. First were measured 1,380 *varas* southward to an arroyo (Arroyo del Salto) which was the boundary with Tzintzuntzan. Next were measured 100 *varas* north from the last house in Cocupao to the vicinity of the little village of San Miguel Cutzaro. Finally (there was no attempt to measure toward the east) 370 *varas* were measured westward, which carried somewhat into the territory of Santa Fe. In total Cocupao was given 1,850 of the 2,000 *varas* to which it was entitled. On the same day Santa Fe petitioned the *audiencia* to reexamine its titles and to restore the lands given to Cocupao, and shortly the lands on the west side of Cocupao were returned to Santa Fe. Consequently, at the end of the seventeenth century the pueblo of Cocupao had practically no lands to the east or west, a slight amount of slope land to the north, and nearly all of its farm land to the south.

[1] See Land-Measurements Units, pp. 17–19.

LAND-MEASUREMENT UNITS

When the Spaniards entered Michoacán they found the Tarascans employing a number of units of linear and areal measurement. The names and values of only a few of these can be recovered from the colonial literature. A basic linear unit was the *pirimu* (*pirimucua*, *perimo*), which is given variously as 1 *vara* and 1 *braza* of Spanish equivalence. The *tzitacua* (cord or rope) was a piece of land 20 *brazas* wide and of varying length. A larger area was the *paracata* (literally butterfly). The Spaniards brought with them a variety of units of measurement, any one of which varied in its accepted value according to what part of Spain the user came from. Commonly the Spanish crown and the Mexican audience, in their land regulations, used these measurement terms without defining them. With the passage of time the various units gained specific and common-

ly accepted definitions in the different parts of Mexico. We have compiled a list of these units with their modern equivalents in Quiroga, as follows:

Dedo (finger)—16 *dedos*=1 *pie*.

Pulgada (inch)—12 *pulgadas*=1 *pie*; 1 *pulgada*=0.023 meter or 0.91 inch.

Palmo (palm or handbreath)—4 *palmos*=1 *pie*.

Pie (foot)—3 *pies*=1 *vara*; 1 *pie*=0.27933 meter or 0.916 foot.

Paso (pace or step)—a *paso común* contained 2½ *pies*, and a *paso geométrico* 5 *pies*.

Vara (yard)—2 *varas*=1 *braza*; 1 *vara*=0.838 meter or 33 inches.

Braza (fathom or span)—1 *braza*=1 *estado*; 1 *braza* varied between 1.62 and 2.00 *varas* in colonial usage, and is now 2 *varas*, 1.672 to 1.676 meters, and about 5.545 feet.

Estado (height of a man)—accepted as the same as a *braza*.

Cordel (cord)—a colonial *cordel* contained 50 *pasos* or 50 *varas* or 25 *brazas*.

Estadio or *Carrera de Caballo*—composed of 208.33 *varas*, 174.58 meters or 190.92 yards; actually approximating a furlong or 220 yards.

Milla (mile)—composed of 1,000 geometric *pies*; 1,666.66 *varas*; 1,298 meters or 0.807 mile (United States).

Legua (league)—composed of 3 *millas*, or 5,000 *varas*, considered to be between 3.894 and 4.19 km., or equivalent to 2.5 or 2.6 miles. There also was the legal *legua* of 4 *millas*; and in 1584 a league equaled 3 *millas* or 3,000 *pasos* or 60 *cordeles*.

(It will be noted that not all of the equivalents are consistent.)

Beginning early in the sixteenth century land grants and cessions were made on the basis of house plots, town lots, town sites, and the lands necessary for crop farming and animal husbandry in accordance with the rank of the individual. The gentleman with coat of arms and a horse (*escudero y caballero*) received a *caballería* or knighthold, and the footsoldier or *peón* received a *peonía*. However, the *peonía* was replaced in terminology quite early by *suerte*, *labor*, and other terms. The units of area were defined in terms of so many yards (*varas*) of radius, or so many *varas* toward each of the four cardinal directions, or so many *varas* on the sides measured "paño y sedas," i. e., measured along the width and the length. The large estates were often granted and defined in terms of radii, and this practice gave rise to many areas to which there was no legal title since obviously circular areas cannot be made to border other such areas throughout their circumferences. In actual practice the landholders absorbed most of these *tierras baldías*, *odiosas*, or *mostrencas*, and developed land areas which had the shape of asymmetrical polygons. Proceeding from largest to smallest, the principal units of area were:

Hacienda (estate; literally, income property, or where something is done)—25,000×5,000 *varas*; 8,778.05 hectares or 21,697 acres.

Sitio de ganado mayor or *estancia* (cattle ranch or farm)—5,000×5,000 *varas*, or a square league; 1,755.61 hectares or 4,338.464 acres.

Sitio de ganado menor or *estancia* (farm for sheep and goats)—3,333×3,333 *varas*; 780.27 hectares or 1,928.133 acres.

Fundo legal para pueblo (legal town site)—after the 1680's it was 1,200×1,200 *varas*; 101.127 hectares or 244.14 acres.

Labor (field; literally where one works)—1,000×1,000 *varas*; 70.224 hectares or 175.532 acres.

Caballería (knighthold)—1,104×532 *varas*; 42.79 hectares or 105.756 acres.

Fanega de sembradura (field or seed plot)—there are as many different "bushel" acreages as there are kinds of seed; however, when the seed is not specified the area is commonly considered to be 276 × 184 *varas* (at one time it was 400 × 400 *brazas*); 3.555 to 3.566 hectares (roughly considered to be 4 hectares) or 8.75 to 8.81 acres. In colonial times 8 *fanegas* were considered to be the equivalent of a *caballería*.

Suerte (lot, patch of ground, piece of ground)—normally located within or near the precincts of a city or town; 552 × 266 *varas*; 10.278 hectares but varying actually between 1 and 6 hectares, and formerly considered to be ¼ of a *caballería*.

Yunta (yoke; area ploughed by a yoke of oxen in 1 day theoretically)—3.5 to 6 hectares.

Sitio de terreno de riego (irrigated land)—uncertain definition.

Solar (house plot or homestead)—50 × 50 *varas*; 0.1756 hectare or 0.43 acre.

Manzana (block; literally apple)—variable; often 0.672 hectare or 1.66 acres.

Vara cuadrada (square yard)—0.70 square meter or 7.55 square feet.

The terms "*puesto*," "*predio*," "*finca*," and "rancho" had no areal significance. A *puesto* was any spot, place, space, shop or barracks, and was often used for the building or group of buildings where the laborers in some part of a large estate (hacienda or *sitio de ganado*) would sleep and eat. In time the term "rancho" replaced *puesto* in its last sense of mess hut or dormitory, and later was extended to a stock farm, any small farm, and any collection of homes of small farmers or tenant laborers. *Predio* is any piece or parcel of real property; and *finca* is any real estate, especially a piece of property with a house or other building.

In 1856–57 the metric system was introduced into Mexico, and in 1862–63 Juárez initiated the use of the metric system in measuring and report-

ing lands. However, the metric system had little popular use until the use of the entire system was made mandatory September 16, 1896. Now, after half a century of presumptive use, the metric system is not used and is only imperfectly understood by the rural population of the Quiroga area; and its chief use is by the merchants and officials in town. The principal parts and conversions, pertaining to land measurement, are:

1 meter=39.37 inches or 1.09 yards.
1,000 meters make 1 kilometer=3,280 feet, or 1,093.61 yards, or 0.62137 mile.
1×1 meter=1 square meter=1 *centiárea*=10.76 square feet.
10×10 meters=100 square meters=1 *área*=1076.4 square feet or 143 *varas*^{2}.
100×100 meters=10,000 square meters=100 *áreas* or 1 *hectárea*=2.471 acres, and 1 acre equals 0.4047 hectare.
1,000×1,000 meters=1,000,000 square meters=100 hectares or 1 square kilometer=0.3861 square mile.

Measurements in the field were made (and still are) by pacing and with a marked cord or rope. Where wheeled vehicles could go, measurement was sometimes made by tying a rag on a wheel of a known circumference and counting the revolutions. Toward the end of the colonial period a formal measuring device (odometer or trocheameter) to count rotations and calculate distances was occasionally used on the main highways. However, until recently most long road distances and cross-country distances were calculated from elapsed time (using the movement of the sun instead of a watch) and conventional estimates of rate of progress of pedestrian, horse, mule, ass, stagecoach, etc. These distances were expressed in leagues, and were qualified as long or short, easy or hard, smooth or broken, etc. Since no compass was used, direction was obtained by reference to the sun, the pole star, and to various landmarks.

THE HACIENDA AND RANCHOS

From the previous discussion it will have been noted that a new element, the hacienda, entered the picture between 1603 and 1681. The hacienda, often an entailed estate or *mayorazco* descending through the first-born son of succeeding generations, developed in the seventeenth century along with the white (and a few mestizo) families which in some five generations since the Conquest had managed to acquire wealth, prestige, and property. In most cases in Michoacán the owners of haciendas were the descendants of *encomenderos* and *corregidores* who had taken advantage of their official positions to acquire lands at the expense of the Indians whom they were supposed to protect, in addition to some lands legally acquired by grant and purchase. Although the Spanish laws from the sixteenth century on repeatedly affirmed that no lands were to be taken from the Indians, the Indians were allowed to sell their lands (under certain restrictions which were seldom observed), and large tracts of land were acquired by dubious purchases. Periodically (especially in 1631, 1643, 1674, 1716, and 1754) the government of New Spain would issue confirmatory titles or *composiciones* (for a consideration) which would absolve the possessors from review and penalty for earlier irregularities, and which also served as perfect and guaranteed titles despite any imperfections in earlier titles. By the end of the seventeenth century there were two haciendas in the area of our study. La Tenería, which was a rented hacienda in 1681, and which presumably had been turned over (in whole or in part) to Cocupao, shows up in 1714 as a *capellanía* (capital property the income from which was used to support an ecclesiastic) which constituted the southern boundary of Cocupao. We can surmise, from 1680 information in the titles of the ex-hacienda of Atzimbo, that Antonio de Cáceres y Secadura (the son or grandson probably of the Alonso de Cáceres of 1603) became afraid that some day the government might really take away the lands (as it had been doing on paper for so long), and therefore turned over the property or its usufruct to the church. This vested interest of the church may help explain why the Indians of Cocupao were never able to obtain actual possession of the land. However, we have no details of the nature or extent of the hacienda of La Tenería. It is quite probable that it was not a true *hacienda de labor* with many thousands of acres of land, but rather was devoted (as its name would imply) to the business of tanning hides and skins. There remains the truly great hacienda which came into being east and south of Cocupao sometime between 1618 and 1680.

Sometime prior to 1870 the Hacienda de Atzimbo was divided among the tenant farmers or *parcioneros*. We did not find out why or how this was done, but on May 31, 1870, the *par-*

cioneros asked the State government to go over the tattered remnants of the pertinent titles and make an authoritative copy which could serve as the basis for modern titles. The fragments of documents copied allow us to trace the main lines of the development of this hacienda from some time in the early seventeenth century up to 1736. The earliest document (which has no date but whose context indicates that it is from the first half of the seventeenth century) represents the sale by Luis Castilleja y Paruata to Francisco Ponce de León of lands termed El Tucuruyo whose described boundaries included nearly all the lands claimed by Cocupao (in its title of 1534) which lay to the east of the pueblo proper of Cocupao and the present site of Zirandangacho. In other words, these lands included all of modern Cuenembo, Atzimbo, El Tigre, La Noria, Santa Cruz, and Los Corrales, and possibly parts of Caríngaro, Sanambo, La Tirímicua and Icuácato, but only Santa Cruz was mentioned. The name Tucurullo is still applied to the area along the Arroyo del Salto between Atzimbo and the Puerta de Cuenembo. Castilleja mentioned that he had obtained this property by purchase from his sisters and by inheritance from his ancestors (who were of the royal Tarascan family). In this connection it is of interest that a legend relates that Atzimbo was named after Atzimba, a sister of the last Tarascan ruler. The next document, of 1680, refers to the hacienda of Nicolás Ponce de León (either son or grandson of Francisco Ponce de León), gives its boundaries (which are much the same as those given previously), and provides for renting a portion for the period of 9 years. The Hacienda de San Antonio Tacupare (later known as Chapultepec) together with Sanabria held the lands to the south, and La Tenería and Cocupa formed the boundaries to the west. The northern and eastern boundaries are uncertain. However, there is reference to a paper (*escritura*) issued by the Pueblo de Cocupao granting rental rights to unspecified lands. This probably was the basis for acquisition of the areas of modern Caríngaro, Icuácato, and Sanambo. Among the places mentioned within the hacienda were: The Pueblo Viejo de Arameo by a *malpais* or volcanic flow (the Malpais de Itziparamuco of Beaumont's map and the Malpais de Cuenembo of today); the Pueblo de Coenembo Santa Cruz; the Puesto de San Bartolomé Atzimbo; and the Puesto de Tupuero y Jarambo y Arameo (it is possible that the copyist used the singular by mistake and the last item should read *puestos*). The renter, Nicolas Rentería, was to erect *puestos* and ranchos wherever necessary. A document of 1696 adds the Puesto de Itziparamuco and mentions Cuenembo and Santa Cruz as separate *puestos*.

Apparently the period 1680 to 1689 was when the term "rancho" was first applied to some of the *puestos*, and during the same period possibly such ranchos as Caríngaro, Icuácato, and Sanambo were established in their present locations. The latter two entities were in existence during the sixteenth century, but both were congregated about 1603. It is quite likely that the sites of the modern ranchos of Icuácato and Sanambo are the same as those of the original Indian pueblos of those names because ranchos and *puestos* were located where there was potable water, and many of the springs in the region have retained their Tarascan names even to this day. It would be logical that a rancho established at the spring of Sanambo, for example, should become known as the Rancho de Sanambo. We must insist (as we have pointed out elsewhere) on the non-Indian nature of the inhabitants of the ranchos, with the exception of La Tirímicua. The haciendas during the colonial period were worked mainly by mestizos and mulattoes, since the Indians worked their own lands for subsistence and in order to make the necessary contributions to the church, the governmental officials, and to the crown. The nature of the population, the pattern of settlement, and the form of economy in the Quiroga area differed in certain respects from the conditions that obtained elsewhere in Mexico. It was a region of comparatively dense agricultural Indian population, of poor pasture lands, and of minimal water supply in the dry season from February to May, which factors kept the large estates or haciendas from attaining the size of the *latifundios* in northern Mexico, and caused them to divide their attention between crop *labores* and cattle *estancias*. Actually there were no *haciendas de ganado* in the Pátzcuaro region, but rather they were *haciendas de labor* which would include one or more *sitios de ganado* or *estancias*. Although there were richly mineralized zones within 50 to 100 miles in all directions (for example Inguarán copper to the south, Ozumatlán and Tlalpujahua

gold and silver to the east, the silver of Guanajuato to the north, and the silver and gold of Tamazula to the west), the great Malpais de Michoacán within which the Pátzcuaro Basin was situated had no important deposits of the precious metals or of copper. Mining *reales*, the *mita* (a Peruvian term for *encomienda* of laborers for the mines) labor system, mining haciendas, and all the other manifestations of a rich mineralized zone were lacking in our Quiroga area. It was inland and divided between the temperate and cold climatic zones, so such items as a very negroid population, seaports, and a plantation economy based on tropical crops were lacking. The Indians had been pacified and completely sedentary since the 1530's, so there were no *presidios*, fortified churches and haciendas, and a paucity of small isolated settlements, such as obtained from Hidalgo to Sonora. Also, the Pátzcuaro Basin, with the exception of the city of Pátzcuaro itself, was Franciscan until the 1770's, although the Jesuits worked briefly in the *tierra caliente* of Michoacán, and the Augustinians dominated the region in a zone completely surrounding the Pátzcuaro Basin. The respective contributions of the Franciscans and Augustinians to architecture, settlement pattern, occupations and forms of economy, place names and personal names, dress, customs, and many other items would make a book in itself.

The area, nature, and settlement pattern of the Ponce hacienda becomes clearer with the information from documents of 1712 and 1714. In 1712–14 it was termed the Hacienda de Labor de San Nicolás Itziparamuco, and it belonged to Manuel, a son of Nicolás Ponce de León. The northern boundary was a *pedregal* on the road to Teremendo (Malpais de Icuácato or de Sajo) and the Cerro Cotzitiro (Cerro del Melón); at the northeast was the Cerro de Capula; adjoining at the east were lands of the Augustinian monks of Tiripitio (Fontezuelas and Lagunillas) and the Loma de Santiago Arameo y Paratzico (probably the Cerro del Divisadero of today); the western boundary was still the lands of La Tenería and Cucupao; and the southern boundary remained the Hacienda de Chapultepec which contained the Puesto de San Antonio Tacupan, the Molino de San Rafael, and Sanabria. Juan Barriga is given as the owner of the Hacienda de Chapultepec, which may indicate a possible origin for the numerous Barriga family of today in the ranchos of Quiroga. The area comprised five *sitios de ganado mayor*, two *sitios de ganado menor*, and 17 *caballerías de tierra*, which would amount to about 11,066 hectares or somewhat more than the conventional 8,778 hectares of an hacienda. This is the equivalent of about 111 sq. km., which approximates the area of the region as circumscribed by our interpretation of the boundaries. Scattered over the hacienda, in appropriate localities for the care of the livestock and of the cultivated fields, were dwelling houses, granaries (*trojes*), corrals, barns (*jacales*—in the Quiroga area the term *jacal* is applied to large permanent structures in which tools, fodder, etc., are kept), and other structures (*otras oficinas*), as well as a number of *puestos* and *puestecillos*. Manuel Ponce died between 1718 and 1722, and the hacienda passed into the hands of Francisco Ponce who died prior to 1736, and the lands were inherited by his son Nicolás Ponce de León. Apparently the hacienda was never converted into an entailed *mayorazco*, since the younger sons and daughters were commonly named as inheritors along with the oldest son; but the evidence is contradictory since reference often is made to but an individual as owner. Probably the eldest represented the entire family in all legal matters, and as the senior he may have had an automatic right of attorney in all matters pertaining to family property. An example is the 1714 reference in the Cocupao papers to the eastern boundary of Cocupao being the lands of Don Manuel Ponce de León and his brothers and sisters. Also, especially between 1696 and 1736, there are several mentions of a Ponce de León purchasing a piece of property which was specifically designated as having previously been a part of the hacienda or patrimony. Probably when a Ponce de León needed some ready cash he would mortgage some part of the property, which might pass out of the hands of the family for a number of years. The papers dated between 1718 and 1736 add a few bits of information: the boundary of the hacienda with the Pueblo de Capula was specifically the Cerro de Capula (Cerro de Buenavista) and the Tres Cerritos (the Loma Guatzivet chagaricu of the 1534 Cocupao *título*, and the Tres Cabezas of today); the most southeastern part of the hacienda included La Cacana (the area around the Estación Chapultepec of today); some part of the hacienda had been set up as a *capellanía*

to defray the expenses of six masses a year by the Franciscan friars in Tzintzuntzan for the soul of Gerónimo Ponce de León (apparently a priest and uncle of Nicolás Ponce de León, the father of Manuel Ponce); another portion had its proceeds dedicated to the Cofradía del Santísimo Sacramento in Pátzcuaro.

After 1736 there is a hiatus in the records pertaining to the lands east of Quiroga until the 1870's. During this period, and probably prior to 1795, the great Hacienda of San Nicolás Itziparamuco was broken into several lesser haciendas with different owners. How, why, or when this took place we do not know. However, in the archives of the Ramo de Tierras for 1762–64 we discovered that the Hacienda de San Nicolás Itziparamuco had come into the hands of Isidro del Corral, and that about that time it became known as the Hacienda de Los Corrales, which would indicate that Isidro del Corral held only a portion of the original hacienda. From the Cocupao parish records we learn that in 1795 there already existed the haciendas of Itziparamuco, Cuenembo, Atzimbo, and Las Lomas del Metate; and that none of these haciendas included the ranchos of La Tirímicua, Sanambo, Icuácato, Caríngaro, and Zirandangacho, whose inhabitants were lumped in with those of Cocupao. In 1822 Lejarza credits Cocupao with four haciendas and five ranchos, and Tzintzuntzan with three haciendas and three ranchos, but the names are not given. We may assume that the Cocupao haciendas were Itziparamuco or Cuenembo or Corrales, Lomas del Metate or El Tigre, Atzimbo, and possibly La Tenería; and the ranchos were La Tirímicua, Icuácato, Sanambo, Caríngaro, and Zirandangacho. The Tzintzuntzan haciendas were San Antonio Chapultepec, San Nicholás Sanabria, and possibly El Tecolote; and the ranchos were Patambicho, and two others of whose identity we are uncertain.

For the anarchic period 1823 to 1859 we have located no records. In 1860 people from Icuácato, La Tirímicua, Sanambo, Caríngaro, Atzimbo, and Cutzaro were reporting to the civil register in Quiroga. The rancho or *barrio* of Cutzaro (it went by both terms) was the ancient little pueblo of San Miguel Cutzaro, a short distance to the north of Quiroga. By 1868 La Noria (an appendage of Atzimbo) had become populated. Some time between 1868 and 1873 Zirandangacho began to appear in the Quiroga records. Either it had been depopulated for a period, or its inhabitants had been considered as dependent on Tzintzuntzan. Probably the boundary was highly uncertain, since in January of 1874 the people of Zirandangacho buried their dead in both Quiroga and Tzintzuntzan. The status of Atzimbo and El Tigre was also uncertain in 1874, since their inhabitants buried primarily in Tzintzuntzan but on occasion buried in Quiroga. In 1872 the rancho Irauco made appearance, and title to it was disputed between Sanambo and Icuácato until (by 1884) it was adjudged to be a part of the rancho Sanambo. By 1884 both Atzimbo and El Tigre had lost the title of hacienda, and there remained in the municipality of Quiroga of that period only the haciendas of Corrales, Sanabria, and Chapultepec, to the south and outside of our area of study. The apparent course of events in the ranchos portion of our area of study was as follows: (*a*) Sometime between 1736 and 1795 the northern portion of the hacienda of Itziparamuco reverted to Cocupao, which had merely rented the area to the hacienda, and the mestizo inhabitants of the ranchos of Icuácato, Caríngaro, and Sanambo took over the ownership as well as the cultivation of the surrounding lands; (*b*) the central zone was divided into the haciendas of El Tigre and Atzimbo which ceased to be haciendas prior to 1884, and Atzimbo was divided among its tenant farmers prior to 1870; (*c*) La Tirímicua and Cutzaro persisted as Indian-mestizo communities belonging to Quiroga; (*d*) the south and eastern entities of El Tigre, Atzimbo-La Noria, Zirandangacho, and La Tenería belonged to Quiroga in civil affairs, but to Tzintzuntzan in religious matters, which caused confusion in both fields. It should be pointed out here that the Quiroga region was never troubled by religious ownership of large properties, which was due principally to the fact that Franciscans and not Augustinians or Jesuits had controlled religious activity in the area. A short distance to the south, the east, and the northeast there were many haciendas and ranchos which were owned by the Augustinians or Jesuits at various times up to 1856 when all real estate was taken away from the religious.

The last period of the hacienda is often termed that of Porfirio Díaz because during his rule (1876–1911) an essentially new group of large

landholders developed in Mexico. However, in the general Quiroga region no new *latifundios* developed, although new names appeared among the owners of larger than average properties such as José María Arriaga and his son Francisco Arriaga for the haciendas Chapultepec and Corrales, José María Torres Ortiz who owned seven *caballerías* in El Tigre in 1889 which passed into the hands of Francisco Torres Mendoza in 1892, and Jesús Villanueva (native and resident of Quiroga) who owned the Hacienda de Sanabria as well as most of Zirandangacho, La Tenería, and Sámano. No foreigners were involved, although elsewhere in Mexico large estates were acquired by Spaniards, Italians, Frenchmen, Britishers, Americans, and Germans. The Ponce de León family did not lose out completely since we find that in the 1890's a Gregorio Ponce de León owned the Hacienda de la Lagunilla, and in Quiroga a Gerónimo Ponce owned most of La Tirímicua as well as several other good pieces of land. In 1910 there remained only the Hacienda de Sanabria (in the *tenencia* of Tzintzuntzan) within the municipality of Quiroga, since the haciendas of Chapultepec and Corrales had been transferred to Pátzcuaro earlier, and the haciendas of La Lagunilla and Quirínguaro were within Jesús Huiramba. However, on the north boundary of Quiroga there was an hacienda of colonial origin, the Hacienda de Tecacho of the jurisdiction of Huaniqueo. In 1822 the lands to the north of Icuácato, including the Malpais de Icuácato or Sajo, belonged to the Hacienda de Santa Catalina Tzintzimacato, and the Hacienda de Tecacho lay to the north and west. Some time prior to 1870 the Hacienda de Tecacho acquired Tzintzimacato and controlled most of the country from Capula and Teremendo to Huaniqueo. As late as 1907 Don Juan Landeta, owner of the Hacienda de Tecacho, owned the Malpais de Icuácato, Sajo, Tzintzimacato, and other lands in that region. During the period of the revolution the Hacienda de Tecacho lost its southeastern holdings, and the country to the north of Quiroga became the Hacienda de Sajo or Zajo belonging to J. Berrueco and his brothers. It was chiefly from this 7,000-hectare hacienda in the 1920's and 1930's that the *ejidos* of Teremendo Jaso, Coro Chico, and Quiroga were obtained.

BOUNDARIES OF QUIROGA AND ITS RANCHOS

The municipality of Quiroga consists of the town of Quiroga, its six dependent ranchos, and the three western pueblos and their dependencies. The municipality, as such, never has had its boundaries surveyed or marked or delimited by law. Its entity is recognized as consisting of the *villa* and the three pueblos together with their lands. Consequently, the determination of the municipal boundaries rests on the identification of the boundaries of the constituent parts. We are not concerned with the two most western pueblos of San Andrés Ziróndaro and San Jerónimo Purenchécuaro excepting to state that they were dependencies of Erongarícuaro during most of the colonial period, primarily due to the influence of the Franciscan convent in Erongarícuaro. The *pueblo hospital* of Santa Fe de la Laguna has been a theocracy essentially from its founding by Don Vasco de Quiroga, in 1533–34 to the present time. Its Indian community or *Comunidad de Indígenas* weathered the period of the Reform Laws and that of the Pax Porfiriana better than did any other Indian community in Michoacán. As proof of this we cite the fact that the Santa Fe community owned 23 *caballerías* worth 18,000 pesos in 1889 (as compared with the value of 6,754 pesos for El Tigre at the same date), and in 1922 Santa Fe still owned 4,500 hectares valued at 151,590 pesos, which represents a drop in acreage but still a respectable acreage for community holdings that had not been benefited by *ejidal* grants. As has been mentioned, Santa Fe consistently won over Quiroga in any lawsuit pertaining to land boundaries. Apparently Cocupao never actually held or worked the lands in the western portion of her domain as outlined in the title of 1534. At the present time the slopes of Tzirate, all of the lands west of the Arroyo de Quiroga (also known as Arroyo de Cutzaro) as far down as the source of the town water supply (Las Cajas), the fields that border all of the western side of the town of Quiroga, and all of the fields west of the road (the former Calle del Muelle) that runs from Las Carreras to the lake, belong to Santa Fe. This means that the Cerro Huarapo

and all of the lake frontage fall within the domains of Santa Fe. Only two areas ever claimed by Santa Fe are now considered to belong to Quiroga town. One is the area of the former rancho of Sámano or Soamano which Santa Fe claimed as late as 1711, but which was possessed by inhabitants of Tzintzuntzan into the 1880's, and which came under the control of Quiroga through private purchase by citizens of Quiroga. The other area is the western portion of *cuarteles* I and II (to the west of a line drawn approximately north and south through the middle of the Plaza Vieja) which was purchased by the *villa* of Quiroga in 1861. This area (described as "Terrenos de La Fábrica, La Atzitzíndaro, y la Plaza Vieja") was divided as follows: The private lands remained in the possession of the original owners, but these landowners became citizens of Quiroga; and the public lands or commons became the property of the *villa* and were utilized for water supply (spring of Atzitzíndaro and Baño de Caballos) and for recreation (the Plaza Vieja became the Plaza de la Constitución, with trees planted and a fountain erected). Possibly the Villa de Quiroga still holds title to the abandoned quarry (La Cantera) on the slopes of Tzirate which was worked in the second half of the nineteenth century and to which a title was obtained. Although at present many citizens of Quiroga town own properties northwest of town, within Santa Fe area, no change in jurisdiction has been recognized. This condition has been perpetuated because the landholders of both Quiroga and Santa Fe inscribe their lands and pay their taxes in Quiroga.

The boundary between the municipality of Quiroga and the municipality of Tzintzuntzan is the most indefinite of all at the present time. This is because the parish of Quiroga was a vicariate of the parish of Tzintzuntzan until 1853, and because Tzintzuntzan was a part of the municipality of Quiroga from 1874 until 1930. So far as the municipality of Quiroga is concerned, the dispute is between the Villa de Quiroga and the Rancho de Patambicho; between the Rancho de Zirandangacho and the ranchos of Patambicho and Puerta de Cuenembo; between the Rancho de Atzimbo and the ranchos of Cuenembo, La Noria, and El Tigre; and between the Rancho de Sanambo and the Rancho del Tigre. In general, the boundary is now considered to be determined by the residence of the owners of lands in the disputed zone. The boundary as of the sixteenth and seventeenth centuries was presumably the Arroyo del Salto which flows into Lake Pátzcuaro near Patambicho. In the eighteenth century and up to 1880 Quiroga recognized that all of the lands from the very exits of Quiroga southward belonged to Tzintzuntzan. In the *actas* of the *ayuntamiento* in the 1870's there are such statements as: "the boundary of this town is the gate at the exit on the Calle Nacional"; "the limits are the Arroyo de Quiroga"; and "the Rancho Sámano of the jurisdiction of Tzintzuntzan." It should be mentioned here that the Arroyo de Quiroga formerly flowed southeast, along the very southern edge of Quiroga, to join the Arroyo del Cerro Azul just below the Abasto Viejo and the stone bridge on the road to Zirandangacho, but some years ago it was diverted at its exit from town through a channel cut so that it flows west to the Calle del Muelle and then along the boundary with Santa Fe until its scanty waters disappear in the herbage near the margins of the lake. Even today the term *Llano de Tzintzuntzan* is applied to all of the arable land in the lake plain outlined by the settlements of Quiroga, Zirandangacho, and Patambicho. However, the acquisition of the properties known as Sámano, La Tenería, Zirandangacho, San Diego, Tucurullo, etc., by citizens of Quiroga town (such as Gerónimo Ponce and Jesús Villanueva) since the 1880's has moved the boundary back to its early position along the Arroyo del Salto—at least so far as the tax collector's office is concerned. The local citizens are not in agreement as to the location of the southern boundary and are quite apt to mention the Arroyo del Cerro Azul or other boundaries. In the eastern sector of the Quiroga-Tzintzuntzan boundary the Arroyo del Salto is commonly accepted as the boundary line upstream as far as where the Mexico City-Guadalajara highway bridges the arroyo, but some of the local citizens insist that the true boundary runs a trifle to the west and roughly parallel to the stream and is defined by the traces of the now abandoned highway from Morelia to Tzintzuntzan and Pátzcuaro via Capula, Atzimbo, and the Puerta de Cuenembo. This same old road constitutes much of the boundary between the ranchos of Sanambo and El Tigre.

The remainder of the Quiroga municipal boundary is with the municipality of Morelia. In general

MAP 3.—Sketch map of Quiroga area. This map is for general orientation purposes. As explained in the text, we were unable to use our survey instruments away from the highway near Quiroga. Therefore, most of the distances and relative positions are approximations. The air photographs shown in the plates can be understood better after consulting this sketch map. All towns within the *municipio* have been shown, and all settlements within the jurisdiction of Quiroga proper. Only the more important mountains and hills, arroyos, and trails have been indicated. Actually, there is a very complex network of trails, and the drainage pattern likewise is highly ramified. The lands of the Villa de Quiroga occupy that portion of the *municipio* east of Santa Fe. The limits (indicated neither on the map nor on the land) run from the lake at the mouth of the Arroyo de Quiroga, along the trail to the highway, around the immediate western outskirts of Quiroga town, and then northward through the Cerro Aramet to the eastern peak of Tzirate. The two place names without symbols (Cantero and La Capilla) indicate, respectively, a quarry and a shrine on the slopes of Tzirate, neither of which is inhabited.

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the local sectors of the boundary are between Sanambo and Capula (with Buenavista), and between Icuácato and Teremendo (with Sajo Grande). However, the agrarian community of Quiroga has its *ejido* in western Icuácato and the Malpais de Icuácato, and residents of Quiroga own and work the triangular area outlined by the peak of Tzirate, the Cerro Chino at the north edge of La Tirímicua, and the Cerro Hueco, so that probably the lands of the *villa* should be thought of as extending along the western sides of La Tirímicua and Icuácato to march with the lands of Teremendo (actually the dependencies of this *tenencia* of Morelia known as Aracurio, Sajo Grande, etc.). Since much of the Quiroga-Morelia boundary runs along a water-divide which is principally rough volcanic terrain with porous water-poor soils, there are no settlements very close to the boundary and there are but few cultivated fields or grazed pastures. Consequently, no one has been much concerned with the exact location of the boundary. This has been true since colonial times, and there is no record of a land dispute between Cocupao and Teremendo-Jaso excepting in the 1930's over *ejidal* grants.

The internal boundaries between the various ranchos, and between the ranchos and Quiroga are of comparatively little importance. Disputes, such as that in the 1870's between Icuácato and Sanambo over the Cerro Irauco, are quite rare. The long and acrimonious dispute between Quiroga and Atzimbo is discussed in connection with the Indian and agrarian community. In few instances were the inhabitants able to designate a precise marker or boundary between any two ranchos, although there is general agreement as to which entity any particular cultivated field belongs. In large part this is because the cultivated lands immediately surround the ranchos and diminish in use and value peripherally. Commonly wooded ridges separate one rancho from another (e. g., Zirandangacho from Atzimbo, La Tirímicua from Icuácato, Caríngaro from La Tirímicua and Icuácato, etc.), and the only cause for dispute would be over wood or pasture, or the few cultivated fields on the tops of the hills and mountains. The chief example of this circumstance is the cultivated top of the Cerro Azul, which seems to be cultivated by residents of Caríngaro, Icuácato, La Tirímicua, and Quiroga. In any case, the municipal council resident in Quiroga has the power to determine the boundaries, and this can be done arbitrarily without the bloodshed that would ensue during and after an arbitration between two pueblos.

AREA OF MUNICIPIO

Since the separation of Tzintzuntzan from Quiroga the area of the municipality has been given as 82, 100, and 120 sq. km. These variations are pardonable in view of the lack of an integrated survey system, the lack of maps based on actual surveys, and the lack of agreement as to the boundaries. Nowhere is there an indication as to whether the lake area has been included in the above estimates. We would incline toward a figure of around 110 sq. km., excluding the lake portion. For the region of our study, Quiroga town and its ranchos, we would estimate 52 sq. km. or about 20 sq. miles (5,200 hectares or 12,849 acres).

SETTLEMENTS IN AREA OF STUDY

(MAP 3)

There are seven permanent settlements of census category within our area of study, namely, the Villa de Quiroga and the six permanent ranchos. In addition there are ephemeral settlements consisting of three or four huts apiece which usually have a life of only a few years—just long enough to exhaust the ground or the patience or pocketbook of the landowner. Such settlements usually leave behind them little more than a name, such as the fields of Tucurullo which sometimes are termed Rancho de Bartolo Sierra after a Quiroga merchant of the middle of the past century who once owned the land and maintained some laborers there. In 1944–46 there was only one such *ranchito* (El Tepamal or Rancho de la Soledad), and that was on marginal lands that probably belong to Teremendo.

RANCHOS

ICUÁCATO

San Antonio Icuácato is 6 miles by footpath northeast of Quiroga, at an elevation of 2,390 meters. It is the second highest and second most distant of the ranchos. Icuácato lies in a small basin nearly surrounded by hills and mountains (Cerro Melón, Cerro Irauco, Cerro Azul, Cerro

Chino, and the Malpais de Icuácato), and is drained by four barrancas that cross the settlement and then unite to form the Arroyo de Icuácato, which flows out of the basin between the Cerro Melón and the *malpais* to die away in the inclosed basin of the Plan de Sajo Grande. Deforestation, erosion, and poor porous soils make this basin settlement a submarginal area. Despite two artificial ponds and several wells and sumps, there is no permanent supply of water. Each year for a period varying between a few weeks and several months the inhabitants must haul their water by pack animal from the wells at La Tirímicua, 3½ miles away. Although the main highway from Pátzcuaro and Quiroga to Chucándiro passes through Icuácato, and minor roads lead to Capula and Sanambo, there is no passage for other than pedestrians and pack animals on any road connecting Icuácato with the outside world. The rancho is bounded by (going clockwise from the north) the *ejido* of Quiroga, the *ejido* of Teremendo Jaso, Capula, Sanambo, Caríngaro, and La Tirímicua. The earliest mention is in the 1534 title of Cocupao where it is designated as San Juan Ucuato, and next when it was congregated in 1603 with Jaso (Xaxo) and Teremendo under the name San Juan Bautista Yucucuato. Other early variants of the name are Ucuacato and Hicuacato. When the site was reoccupied by tenants of the Hacienda Itziparamuco (date uncertain, and probably through a rental agreement either with Cocupao or Teremendo Jaso) the name took the modern form of San Antonio Icuácato. There is a modern chapel dedicated to San Antonio de Padua in which masses are said once a year by the curate of Quiroga. The Tarascan name is said to mean "where they bathe" (*donde se bañan*), which is ludicrous in view of the extreme scarcity of water. In recent years the population has ranged between 50 and 60 families who inhabit 46 of the 51 houses (1945 census) in the community. The total population was 268 in 1945; 249 in 1940; 239 in 1930; 195 in 1921; and 221 in 1900. In the 1860's and 1870's, and again from 1914 to 1928, the area was used as a hideout and headquarters for local guerrilla, bandit, Cristero, revolutionary, and other partisan bands. There is no school and all but 2 of the inhabitants are illiterate. There is no store, and there is no occupation other than farming, supplemented by some woodcutting and charcoal burning. In 1945 there were 1 charcoal burner, 4 *arrieros*, 5 landless *peones*, and the rest were farmers. Nearly all the heads of families own the *solar* upon which their house is built, and parcels of agricultural land of various sizes. The majority are *agricultores propietarios* (farm owners), some are tenant farmers (*medieros*), and a few are landless farm laborers. The principal named areas or fields in which they have their parcels of cultivated land are: El Aguacate, El Capulín, Cerro Azul, Cerro Melón, El Corral, Ecuaro, El Jabalí, El Jazmín, La Joya and La Joyita, La Laja and Las Lajas, Llano Blanco, Los Llanitos, El Madroño, Las Mesitas, La Morera, La Piaña, Piedra de la Luna, Los Pocitos, and La Presa, most of which are within three comprehensive areas known as El Plan de Icuácato, Cerro y mesas del Melón, and El Llano Blanco. The 36 farmers of the rancho plant principally maize (all 36 farmers), *habas* or broadbeans (30 farmers), wheat (23), kidney beans (14), and pumpkins (7). There are no other field crops. In an average year the residents of Icuácato sow 1,865 liters of maize, 5,825 liters of *habas*, 1,825 liters of wheat, and 201 liters of beans. The average or typical farmer plants 50 liters of maize, 200 liters of *habas*, and 80 liters of wheat. Despite the paucity of water there is enough pasture and browse to support a fairly large livestock population. Around the houses are kept 479 hens, roosters, and pullets, and 59 turkeys; all but two families keep poultry. Also near the houses are 141 beehives, owned by 18 families. Ranging around the houses and throughout the settlement were 160 pigs, owned by 38 families. About a dozen families owned 274 sheep and 41 goats, which normally ran together. At the time of our census there were 57 cows, 48 calves, 4 bulls, and 109 work oxen, together with 37 burros, 29 horses, and 1 colt. To finish the picture there should be mentioned the 96 dogs (owned by 43 families) and 43 cats (in 27 houses).

Other than in the dry season, Icuácato presented a pleasing scene with the houses distributed irregularly over the slopes broken by the four arroyos, and with a few houses built on the margin of the lava flow at the northwest side. Each house was surrounded by a fairly large *solar* which provided space for a yard or patio, a small plot for maize or beans, and scattered ornamental and fruit trees, shrubs, and herbs. The distribution

of the houses was conditioned by the terrain principally, and the dirt roads or alleys wound around so that every house had an exit onto a public road. There were no *cuarteles*, *barrios*, streets with names, or houses with numbers. To find a given person or house it was necessary to use a guide. Although only 4 houses had what might be termed a flower garden, about 40 of the houses had a scattering of flowering plants which testified to the loving care of the women who had to pack the water for the plants as well as for the household. The most popular flowers were, in order, various kinds of "geraniums," rue, roses, carnations, petunias, and herbs popular in folk medicine. There were no truck or vegetable gardens, but about a third of the families cultivated a few *chayote* and chile plants near the houses. Neither were there any fruit orchards, but scattered fruit trees constituted the chief source of ornament and shade in the community. Peaches dominated, with 184 trees scattered over the *solares* of 42 houses; and the other introduced trees were 4 quinces, 2 pears, 2 cherries, and 1 mulberry. Agaves led the list of native plants, and 97 of these *magueyes* punctuated the landscape, along with 65 hawthorns (*tejocotes*), 50 clumps of cultivated edible cactus (*nopal manso*), 48 native cherries (*capulines*), and but 1 white zapote. The more common of the purely ornamental trees and shrubs were 50 oaks, 22 large yuccas, 16 ash trees, and a scattering of elder, pine, cypress, floripondio, and tree tobacco, down to a lonely eucalyptus planted by the chapel.

All the houses are of one story and are made of local materials. Hewn pine planks, unshaped stone, and sun-dried adobes are the materials used in the walls (31 houses of plank walls; 9 of plank and stone; 4 of plank and adobe; 1 of plank, stone, and adobe; and 5 of stone—of the 50 houses other than the chapel, whose walls are constructed of plank, stone, and adobe). Only 6 of the 46 inhabited houses were whitewashed. The roofs are commonly of grass thatch (28 of grass; 12 of grass and tile; 3 of grass and shakes; 6 of tile; and 1 of tile and shakes) arranged in two slopes (*dos aguas*) from a center ridgepole (42 of the houses), but 8 houses approximated the presumptive ancient form with four slopes from a central peak. Ten of the houses were of the Sierra Tarascan *troje* type in general appearance, but only 4 had the typical *tejamanil* or shake roof. The houses ranged from 1 to 7 rooms (1 house), but 24 had but 2 rooms, 11 had 3 rooms, and 9 had but 1 room. Usually there were as many exterior doors as there were rooms, and only 2 houses had windows (1 with 1, and another with 2), which were small rectangular openings without glass. The floors were principally of earth (29 houses), although 19 houses had wooden as well as dirt floors, and 2 houses had only wooden floors. There were no privies or backhouses of any description. There is no piped water, and all of the water is packed in *ollas* or jars from the several wells and sumps, as long as these have water. Most of the people sleep on *petates* (mats) on the floor, although 10 families possessed a total of 12 wooden beds which were used in addition to *petates*. The only fuel used is *leña* (cut sticks) in the open hearths or cooking places. Twenty-three families used pitch-pine splinters or *ocote* for lighting, 16 families could afford kerosene (*petroleo*) in lamps, 4 households commonly used candles, and 3 families relied on the light from the cooking fire. In all the rancho there was no radio or even phonograph, and but 2 hand sewing machines. In all Icuácato there was no wheeled vehicle, excepting 1 small handcart. All of the above describes a poor but rather typical isolated Michoacán rancho.

SANAMBO

In most respects San Diego Sanambo was the superlative rancho, being farthest from Quiroga, largest in area and population, and highest in elevation. Its location on the rather steep slopes that descend from the base of the Cerro de Sanambo (Cerro de Buenavista) to the hanging valley of El Tigre-Caríngaro-Atzimbo-La Noria, at a mean elevation of 2,450 meters, affords a magnificent view southwest over the northern portion of the lake basin. Most of its lands occupy the middle crests and slopes of the undulating ridge which extends eastward from El Tzirate through the Cerro Chino, Cerro Azul, and Cerro Irauco, toward Capula and then bifurcates toward the Cerro del Aguila and the Cerro Quinceo. Like Icuácato, deforestation and erosion, together with the elevation which throws all of it into the *tierra fría*, have made Sanambo a submarginal area, but the soils are somewhat more retentive of moisture and there are a number of permanent springs and artificial ponds (*jagüeyes*). Although between 6

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and 7 miles due east from Quiroga by foot trail, Sanambo is only about a mile from the paved highway (Mexico City to Guadalajara) which curves northward to pass through the Puerto del Tigre. Numerous trails connect Sanambo with all of the communities in the area, and the former main highway from Morelia to Tzintzuntzan passed through Capula (about 4 miles distant), Buenavista, Sanambo, and El Tigre. The rancho is bounded (going clockwise from the north) by Buenavista, Iratzio, El Tigre, possibly a little of Atzimbo, Caríngaro, Icuácato, and Capula. The earliest mention of Sanambo is its listing (as Sanabo and Zanambo) in 1569 as part of the *doctrina* or parish of Tzintzuntzan, although the Loma Guatzivet chagaricu and the Monte Yraocojuato of the 1534 Cocupao *titulo* fall within or on the boundary of Sanambo. The first mention as a pueblo is in connection with the 1603 congregation when it is mentioned with Zirandangacho under the name Tzanambo. It reappears as a rancho in the eighteenth century and has maintained its identity under the forms Sanambo and Zanambo. This name has two locally accepted etymologies: (*a*) from *xanambo*, place of *xanamu* (a type of reddish vesicular lava used in masonry); and (*b*) from *sanango*, place of *sanaga*, a cocoon common on madroño trees in the area. Sanambo possesses the largest chapel of any of the ranchos, erected early in this century and said to be dedicated to the Sagrado Corazón de Jesús. This would imply that San Diego or Santiago was the titular saint of the original pueblo, whose name is still remembered in the area.

The population has remained rather static, although a gain was registered in 1945 over the figures for 1900, which was true only for Icuácato and Sanambo among the ranchos. The population has been 299 in 1945; 286 in 1940; 326 in 1930; 307 in 1921; and 259 in 1900, throughout which period it was the most populous of the ranchos. In 1945 there were 61 families living in 49 of the 52 houses in the settlement. The settlement composes an inverted L shape which centers on the main springs and adjacent chapel. The waters of these strong and good springs are now concentrated in concrete basins or *pilas* which were constructed in the 1930's. The waters of Sanambo had such a good reputation that during the second half of the nineteenth century and until the revolution there was a rum factory here, which has given rise to the name of La Fábrica for the plot or *predio* where the distillery was situated. There is no school in Sanambo, and only 6 of the inhabitants are literate. Neither is there any store except a *tendajón* kept in the house of one of the farmers, nor other enterprise besides those connected directly with farming. In 1945 there was one *batellero* (maker of crude wooden bowls), six families of landless agricultural workers or *peones*, and the remainder were farmers all of whom owned their house site or *solar* and the fields that they cultivated. The 38 active farming households all planted maize (2,699 liters each year); 30 also planted wheat (2,144 liters); 19 planted *habas* (890 liters); 10 planted barley (505 liters); and 15 planted kidney beans (125 liters). There were no other cultivated crops, excepting occasional interplanting of pumpkins with maize and beans. The principal cultivated fields or areas within the rancho are El Albaricoque, Barranca de los Chávez, La Campanilla, La Capilla, El Capulín, Los Capulines, La Casita, El Cerrito, Cerro Chiquito, Cerro de Irauco, Cerrito de Sanambo, El Corral, La Cuesta, El Desmonte, El Encinal, La Estacada, La Fábrica, La Fábrica Chica, El Fresno, La Humedad, El Jagüey, La Loma, El Madroño, Mesa de Pineda, Las Mesitas, Pila de la Guare, El Pinabeto, El Salto, and San Rafael. Livestock consisted of 169 work oxen, bulls, cows and calves; 32 horses and 9 burros; 40 pigs; 20 sheep and no goats; 14 turkeys and 6 pigeons; 222 hens, roosters, and pullets; and 47 dogs and 22 cats.

Sanambo, like Icuácato and all the other ranchos, has no formal subdivisions such as *barrios* and blocks, nor any named streets or numbered houses. However, the pattern of settlement is the most closely knit of any of the ranchos, and Sanambo and Caríngaro are the only ones of these communities which have anything approaching a center—in the area of the chapel and the main springs. The 51 houses and the chapel are all of 1 story, and 49 of the houses are inhabited by 61 families. Although 26 of the houses had walls constructed of wooden planks or split logs there were 13 that combined adobe and planks, 3 that were entirely of adobe, 3 of adobe and stones, and 6 of more varied materials. Somewhat greater attention to appearances was manifested by the fact that 14 of the houses had the walls whitewashed or plastered with mud. Grass thatched roofs were in the minority (only 8 of grass alone or in combination with tile or

shake), while 29 were of tiles alone, 5 of shakes alone, and 9 of tiles and shakes. The roofs of all the houses were of *dos aguas* excepting 5 which had a shed roof over part of the structure. The number of rooms varied from 1 to 9 (1 house), but most of the houses were of 2 (19), 3 (16), or 4 (10) rooms. The floors were about evenly divided among dirt (19), wood (15), and a combination of dirt and wood (15); and 2 had brick floors. There were 4 houses which approximated the Sierra *troje*, but these had tile instead of shake roofs. The number of doors varied from 1 to 9 (1 house), with 2 (22 houses) and 3 (14 houses) being most common. Wood-shuttered windows were found in 9 of the houses. All of the houses had a yard, but there were no fruit orchards or flower gardens, and only in the 27 exterior house plots on the upper periphery were there small seed plots or *sementeras*. As in all of the ranchos, there was a scattered planting of fruit and ornamental trees, of which the most common were: 160 peach trees, 22 *capulines*, 17 cactus clumps, 16 *tejocotes*, 15 agaves, and 14 ash trees, as well as a few white zapotes, avocados, quinces, pears, cypresses, etc., including 1 eucalyptus. The most common flowers in the house plots were various types of "geraniums," rue, *belenes*, *bichis*, and lilies, and there were 3 bougainvillea shrubs. About a third of the households had a few *chayote*, chile, and tomato plants. Domestic water supply was about evenly divided between water carried from the main springs for the lower part of Sanambo, and water taken from a wooden flume in the upper rancho. As was true for all of the ranchos, there were no privies. Wood constituted the only fuel for cooking, while 17 households used pitch-pine splinters for illumination, 16 used *petroleo*, and the remainder varied among pitch-pine splinters, *petroleo*, and candles. Although there were no radios or phonographs, there were 11 hand sewing machines, 4 carts, and 1 hand cart. Most of the families (30) possessed at least 1 wooden bed, although 18 used only floor mats, and there was 1 iron camp cot.

CARÍNGARO

San Miguel Caríngaro is a small but disperse rancho perched on a rough, rocky, eroded and steep terrain, about 2 miles by trail east-northeast of Quiroga, and 1 km. west of the paved highway near the crest at Atzimbo. The lands occupied by this rancho are mainly the slopes that descend from the Cerro Azul, streams from which concentrate in and just below Caríngaro to form the Arroyo del Cerro Azul (also known as the Arroyo de Caríngaro, Arroyo de las Tinajas, etc.). The main part of the rancho is located around the spring which comes out of the rocks at a point where the steep rocky slopes intersect a small bench of gently rolling surface. At this point, with an elevation of 2,220 meters, there is a water basin and watering trough of concrete (constructed in 1939), and nearby is the chapel of San Miguel Arcángel built in 1880. The open space between the spring and the chapel affords a near approach to a plaza, but the main activity here is getting water, washing clothes, and gossiping. Just below the chapel, and on the banks of the main arroyo, are the ruins of the *fábrica* which distilled a high quality rum up to about 1918. Foot trails connect Caríngaro with Sanambo, Icuácato, La Tirímicua, Quiroga, and Atzimbo, which are the surrounding entities. The first mention encountered of Caríngaro is as a rancho in the eighteenth century, although the profusion of *tepalcates* or potsherds over the slopes above the spring and the settlement indicate a prehistoric occupation of the area. The only form of the name known is Caríngaro, which has been interpreted to mean "very dry place," "sterile place," and "place of hunger or want"—any of which terms would describe the general area quite well.

The population has been consistently small: 74 in 1945; 64 in 1940; 72 in 1930; 61 in 1921; and 109 in 1900. In 1945 there were 14 families, occupying 12 of the 14 houses in the community. There is no school, and there is but 1 literate person in the community. There is no store, not even a corner *tendajón*. The inhabitants are purely agricultural since all 12 households plant crops, although 2 or 3 do not own the lands they cultivate, and 1 man combines the occupations of farmer, *arriero*, and *calero* (dispenser of lime used in preparing maize for tortillas). The chief crops planted are maize (345 liters a year, by all households), wheat (310 liters by 6 families), *habas* (337 liters by 6 families), and kidney beans (76 liters by 10 families). Commonly no other crops are planted. The principal named fields or cultivated areas in Caríngaro are La Joya del Plan Grande, Agua Escondida, El Capulín, La Cueva, La Espiguilla, and El Fresno. As usual, hens,

roosters, and pullets lead in numbers with a total of 60; and there is 1 turkey. There are 16 cows, 20 work oxen, 1 bull, 18 calves, 4 horses, 6 burros, 11 pigs, 52 beehives, 15 dogs, 8 cats, and no sheep or goats.

The houses, perched on rocky ledges or located on ridges between arroyos, are connected by the merest of footpaths, excepting for those situated along the main traces from the *pila de agua* and the chapel to the highway. All 15 of the structures in Caríngaro are of 1 story and *dos aguas*, and none has windows excepting the chapel, which has 5. Wood, stone, and adobe are the chief wall materials (5 houses with walls of wood and adobe, 3 of planks alone, 2 of adobe alone, 1 of stones, 2 of wood and stone, and 2 of wood, stone, and adobe). Thirteen of the buildings are either whitewashed or have been mudplastered. The principal roofing material is tile (11 houses), and the others are combinations of tile, shake, and grass. Three houses approximate conventional wooden *trojes*. The houses vary from 2 to 4 rooms, but 9 houses have only 2 rooms. The flooring is of earth in 9 houses, of earth and wood in 5, and 1 house has a brick floor. Doorways range from 1 to 4 in number, with 10 houses having but 2 doors. All of the houses have small yards, but the *solares* are so small and rocky that only 5 of the better situated ones have associated *sementeras*, and 1 of these has a *huerto* or small orchard. Owing to situation at a lower elevation than Sanambo and Icuácato, and in *tierra templada*, there is a greater variety in fruit and ornamental trees and shrubs, although the number is small. The chief elements are 34 agaves, 29 peach trees, 17 *zapote blanco*, 17 *chupire*, 10 castor-bean shrubs, 9 *tejocotes*, and 9 ash trees, with a sprinkling of yuccas, cactuses, chirimoyas, avocados, oaks, *capulín*, willow, quince, etc. Two of the houses have flowers in *macetas* or flowerpots, and all of the others have at least a few flowers among which the most common are "geraniums," *castillos* (an introduced African mint that has gone wild), rue, roses, and tree tobacco. Two families raise a few chile peppers. All water is obtained from the central *pila* at the spring. The only cooking fuel is wood, and illumination is chiefly *petroleo* (6 houses), *ocote* (3 houses), and combinations of candles, pitch pine, and kerosene in the other 3. Eight families sleep only on mats, and 4 households have both *petates* and wooden beds. There are 3 hand sewing machines in the rancho, but no radios, phonographs, carts, or any other type of wheeled vehicle.

LA TIRÍMICUA

The rancho of La Tirímicua differs in a number of respects from the other ranchos. Probably it never was a part of the Hacienda Itziparamuco or Hacienda Atzimbo, and its population (although mestizo) is more Indian than that of the other ranchos. Like Caríngaro and Atzimbo, it was never mentioned as a pueblo, but there has been a very close contact between La Tirímicua and Quiroga since time immemorial. Until the 1880's most of the lands in La Tirímicua belonged to Indians of Quiroga, and a number of members of the Comunidad de Indígenas de Quiroga still own lands in the area. During the 1890's Gerónimo Ponce of Quiroga bought the titles or *escrituras* of property in La Tirímicua from some 30 members of the Indian community; in 1907 he deeded his La Tirímicua property to his 2 sons Luis R. Ponce Estrada and Jesús Ponce Estrada; and in 1941–42 their heirs sold these lands to Diego Fuentes Aguilar and his wife Mercedes Rodríguez Sánchez (natives of Quiroga) who still possess them. During the past 40 years these lands have been estimated at areas ranging from 60 to more than 250 hectares, and have been valued at 6,000 pesos (1907), 21,700 pesos (1937), and 13,450 pesos in 1945. The rancho, as consolidated by Gerónimo Ponce and his successors, is essentially the possession of one family since all the other holdings in the rancho area are not valued at more than about 8,000 pesos, and these holdings are mainly on the periphery. Most of the inhabitants of the settlement own the *solares* upon which their houses are built, but they are all either renters of or workers for the Fuentes. This condition obtains elsewhere only in the rancho of Zirandangacho, most of which is owned by two families. Being but an appendage of Quiroga, and without resident landowners, the rancho never has had a chapel or a patron saint. It is possible that, during the early sixteenth century and before any of the congregations, there was an Indian *pueblito* on the mesa a few hundred yards northwest of the present community. There are the remains of a *yácata* on the southeastern tip of this Mesa de Santiago, and potsherds and artifacts are to be found weathering out over most of the surface of the mesa. Possibly

here was one of the several fugitive Santiago pueblos which cannot be located from historical records or tradition.

La Tirímicua is situated in a hanging valley, at an elevation of 2,350 meters, about 2.6 miles northeast of Quiroga. The actual settlement straddles the depression or *joya*, between the Mesa de Santiago and an outlier of the Cerro Azul, through which waters pass on their way from the valley through a precipitous barranca to become the eastern affluent of the Arroyo de Quiroga. The best lands are in the Joya and Plan de Tirímicua, within the valley, but cultivation is carried on over the Mesa de Santiago, and the slopes of the Cerro Chino, Cerro de la Pulga, La Pulguita, Cerro Azul, and Cerro de la Muñeca, which surround the valley. The name of the rancho is derived from four shallow wells of sweet cool water located a few rods upstream from the settlement. *Tirímacua* means either "in the well of water" or "the wells." During the dry season these wells of Tirímicua must supply not only the residents of La Tirímicua but also those of Icuácato and El Tepamal, and there is barely enough water for drinking, cooking, watering animals, and laundering. As a consequence there has been no development of irrigated crops in the Joya de Tirímicua. Because of the restricted ownership of lands the population apparently never has been very large in modern times. It was 98 in 1945; 88 in 1940; 87 in 1930; 55 in 1921; and 101 in 1900. The community consists of 19 families who live in 17 house groups. All of the heads of family are tenant farmers or share croppers (*agricultores medieros*) excepting two recently arrived *peones* and one woodman or *leñero*. The crops planted in 1945 were: maize (544 liters by all 14 tenants), wheat (930 liters by 11 farmers); *habas* (585 liters by 7 farmers), and kidney beans (36 liters by 3 farmers). According to our 1945 census there were 80 hens, roosters, and pullets; 17 turkeys; 32 pigs; 81 sheep and 1 goat; 9 horses and 9 burros; 12 cows, 2 calves, and 25 work oxen; 21 beehives; 22 dogs, 8 cats, and 1 pet rabbit. However, we are positive that many rented animals (work oxen) and animals run on shares (cows, sheep, and goats) were not included in these figures for fear that we were some sort of assessors or tax collectors who might include such animals in their personal property. As it was, 51 of the sheep, 5 of the cows, and 6 of the beehives were listed as "on shares" (*a medias*), and 18 of the work oxen were "rented." From our own observations it is certain that there were many more animals than listed above, especially sheep, goats, cows, and turkeys. This lack of confidence was not noticed in the other ranchos where the farmers were owners of both land and livestock. The chief areas farmed in La Tirímicua go by the names of Agua Azul, La Cañada, La Capilla, Los Conejos, La Joya, La Ladera, La Mantequilla, Mesa Chica and Mesa Grande de Santiago, El Plan, La Pulguita, La Pera, La Ringlera, El Sumbido, and Las Víboras.

The houses of the settlement are in two groups separated by the highway (only a burro trail) which goes from Quiroga to Chucándiro through La Tirímicua, Icuácato, and Sajo Grande. On the slopes of the Mesa de Santiago is the two-story ranchhouse of adobe walls and tile roof, and an accompanying *jacal* or barn. One renter, the mayordomo for the landlord, occupies the ranchhouse, and 15 other households are in the same area, arranged in a fairly rectilinear pattern. On the other side of the arroyo and highway is 1 household in three 1-room Sierra-type *trojes* with a separate kitchen house or shed, and there is 1 unoccupied *troje*. All of the houses excepting the ranchhouse are of 1 story, and all but 5 *trojes* with 4 roof slopes have roofs of *dos aguas*. The *trojes* are built of planks, and the remainder are a hodgepodge of adobe, stone, and wood walls, with roofs of tiles or grass thatch, and floors of tamped earth. Two-room houses predominate, with either 1 or 2 doors and no windows. About half of the houses are whitewashed or mud-plastered. The settlement area is dusty, grown over with wild composite shrubs and hoarhound, and relieved of its barren appearance only by its setting. Cultivated vegetation is scarce in the settlement, there being only 44 peach trees, 6 *capulines*, 3 ashes, 3 *tejocotes*, 3 agaves, several willows by the wells, 1 magnificent yucca, and a few other trees and shrubs. Because of its position in *tierra fría* there are no *chupires*, *colorines*, castor-bean shrubs, or bougainvillaea to add vivid greens and reds to the vegetation color. A few women keep some flowers in *macetas* (chiefly 5-gallon kerosene cans), and these are mainly "geraniums." As mentioned, all of the water comes from the wells. Cooking fuel is principally oak sticks, with some pine wood and the occasional use of corncobs. Five households use

kerosene, and the remainder commonly use *ocote* for lighting. All sleep on floor mats. There is but one cart in the community since all the roads are but foot trails to Icuácato, El Tepamal and Teremendo, Quiroga, and Caríngaro. There are no radios or phonographs, nor even one sewing machine in La Tirímicua. It has no store, *tendajón*, school, or other type of building or enterprise not connected with agriculture. There is but one literate person in the community. As a sideline in the "off-season," the men do cut wood, burn charcoal, transport water and wood and charcoal, cut *zurumuto* (a grass used for thatching and packing), gather Spanish "moss" and *tabardillo* (a composite) for use in packing pottery and woodwork in Quiroga, elaborate crude wooden bowls used in the lacquer industry in Quiroga, hunt squirrels and rabbits, and gather *capulín* and *tejocote* fruit in season. In general this rancho is *muy triste*—very sad or depressing.

ATZIMBO

The rancho of Atzimbo is probably the most prosperous and most sophisticated of the ranchos belonging to Quiroga. Possibly this condition derives from the fact that Atzimbo is the oldest *puesto* or rancho developed within that portion of the Hacienda de Itziparamuco which now belongs to Quiroga. However, the factors influencing the original selection of the site (good soil, fairly good water supply, location on a road from Valladolid to Tzintzuntzan and Pátzcuaro, etc.) probably have been of the greatest importance. The present settlement of Atzimbo is located on a bench or mesa which slopes to the east and south from the Cerro de Tucurullo (Cerro Jorullo, etc.) toward the once fertile Plan and Joya de Atzimbo which constitute the lowest portion of the hanging valley occupied by the headwaters of the Arroyo del Salto. In the past generation or two, denudation and erosion have deepened the channel of the arroyo upstream from the falls or El Salto so that in the heart of the *joya* the channel has cut some 20 feet through alluvium and decomposed volcanic ash to reveal the rubble of an old volcanic flow. Also, channeling and denudation have stripped the arable soil from large areas along the mesa margins, leaving a "badlands" of infertile *tepetate*. The lands claimed by Atzimbo march with those of Caríngaro, Sanambo or El Tigre, La Noria, Cuenembo or Puerta de Cuenembo, Zirandangacho, and Quiroga. The paved highway from Morelia passes just a quarter of mile to the north of the settlement, and along this highway it is about 2.5 miles west-northwest to Quiroga town. The old road from Morelia to Tzintzuntzan, which passes along the east side of the settlement, is still used as a trail to the Puerta de Cuenembo and other settlements to the south, and ramifications north and east from the old road lead to Caríngaro, Sanambo, El Tigre, and La Noria. The elevation of the rancho on the mesa is 2,230 meters, which places the entire area within the *tierra templada*.

Atzimbo first appears in records as a *puesto* of the seventeenth century Hacienda de Itziparamuco, under the name San Bartolomé Atzimbo. By some time in the eighteenth century the area of the present rancho was converted into the independent Hacienda de Atzimbo. This hacienda came into the hands of its tenant farmers some time in the nineteenth century, prior to 1870. During the latter half of the nineteenth century and until 1908 there were frequent conflicts between the Comunidad de Indígenas de Quiroga and the *parcioneros* of the hacienda and ex-hacienda of Atzimbo over lands along the banks of the Arroyo del Cerro Azul, from La Tepóricua up stream through the area known as Las Tinajas and extending northward up the slopes of the Cerro de La Muñeca (Cerro de la Mina, etc.). In 1908 the dispute was settled by dividing the disputed area equally between the two parties. As mentioned previously, Atzimbo has had mixed relationships with Quiroga and Tzintzuntzan, and although now it is definitely a part of the municipality of Quiroga in all civil matters and buries its dead in the Quiroga cemetery, it is still nominally included within the parish of Tzintzuntzan. The chapel in Atzimbo is one of the oldest in the area, and it possesses two bells one of which dates from 1825. Although known throughout its colonial history by the name San Bartolomé Atzimbo, at present there is much uncertainty in Atzimbo as to the patron saint and some say that it is San Isidro—the patron saint of farmers. The name Atzimbo has been derived from two sources: (*a*) from Atzimba, the legendary sister of the last Tarascan ruler, who presumably owned all of the area, and (*b*) from *Atzimu* (*lugar lodoso*), meaning place of mud or clay. The first derivation seems to be the better.

The population of Atzimbo evidently was much depleted during the period of the revolution, and it has not yet regained the numbers or relative position it held (second largest of the ranchos) in 1900. The population was 207 in 1945; 179 in 1940; 159 in 1930; 142 in 1921, and 228 in 1900. In 1945 there were 41 families living in 36 of the 44 houses in the settlement. This rancho occupies the most even terrain of any of the settlements, and is laid out in an open or disperse fashion with large *solares*, and there are cultivated fields between many of the houses. The chapel does not constitute a center for the rancho and there is no important spring of water to condition the settlement pattern. Most of the households obtain water from the several shallow wells in the community, and but three get water from the small springs near the arroyo. There is no school at present in Atzimbo, but a private school for boys was in existence in the 1880's and possibly continued until the revolution. According to our census of 1945 there were no literate adults in Atzimbo, but the literacy census of 1945 reported 70 individuals above the age of six who could read and write. There is no store, but one of the farmers keeps a *tendajón* in his house. Practically the only occupation is farming, and all of the heads of household are *agricultores* who own both *solares* and farm lands excepting one woman (with no stated occupation excepting household chores—*quehaceres*) and one farm laborer or *peón*. Because of consolidation of certain family groups in working the farm land there are but 30 listed active farmers. In 1945 all 30 planted maize (1,553 liters), 27 planted wheat (2,508 liters), 28 planted kidney beans (498 liters), and eight planted *habas* (341 liters). Livestock are not numerous but comprise 366 hens, roosters and pullets, and 31 turkeys; 119 cows, calves, work oxen, and bulls; 65 sheep and 4 goats; 38 pigs; 20 burros and 16 horses; 42 beehives; and 43 dogs and 25 cats. Apparently Atzimbo is the one rancho in which there is some attempt to raise fighting cocks. The principal areas of cultivation are named La Joya and El Plan de Atzimbo, La Alameda, El Capulín and Los Capulines, El Desmonte, Los Duraznos, El Encinal, La Espiguilla, El Fresno, El Granjeno, La Loma and La Mesa de Atzimbo, Los Magueyes, Los Nogales or El Tucurullo, El Salto, El Cerro de Tucurullo or Jocurullo, San Antonio, and San Ignacio.

The settlement proper consists of 44 houses and the chapel. All the houses are of 1 story and with roofs of *dos aguas*. The house walls are principally of planks or split logs with some use of adobes (33 houses), 6 are adobe, and 5 are of wood; and the roofing material is tile in 40 of the houses. Rooms vary in number from 1 (3 houses) to 5 (2 houses); there are 16 houses with 2 rooms, 11 with 3 rooms, and 13 with 4 rooms. Flooring is of tampered earth and wood in 21 houses, earth alone in 19 houses, wood alone in 4 houses, and bricks in the chapel. All but 11 of the buildings are whitewashed or mud-plastered. Between 5 and 9 of the houses approximate the Sierra wooden *troje*. Most of the houses have 2, 3, or 4 doorways, and 8 houses have wooden-shuttered window openings. All of the houses have ample *solares* with yards; 16 have associated *sementeras*; 5 have small fruit orchards; and 3 households raise a few *chayotes* and chiles. Ten of the households raise flowers in regular pottery flowerpots, and all of the others have a variety of flowering plants in the yards. The most popular flowers are "geraniums," roses, rue, *belén*, and carnations. The chief fruit trees and shrubs are 152 peaches, 51 cactus clumps, and about 40 agaves, 34 *tejocotes*, and 18 white *zapotes*. The chief shade and ornamental trees and shrubs are 51 *colorines*, 35 yuccas, 21 ash trees, and 11 oaks. An indication of lower elevation and warmer winters is to be found in the considerable number of *colorines*, cactuses, yuccas, and *zapotes*, as well as the only *cosahuates*, and Peruvian pepper trees found in the ranchos. Oak and pine wood constitute the only fuel for the house fires. It will be noted that none of the ranchos can afford the use of charcoal. Practically all of the households use kerosene for lighting; and all but four have wooden beds. Further proof of the sophistication and wealth (comparative) of Atzimbo is the presence of 2 carts, 6 sewing machines, 1 phonograph (the only one in all the ranchos), and 16 metal handmills for grinding maize to be used in making tortillas. Although all of the other ranchos have at least 1 or 2 hand mills, and Icuácato has 23 and Sanambo 18, the considerable number in Atzimbo, together with the predominant use of kerosene for lighting and wooden beds for sleeping, etc., tend to put this rancho in a class by itself.

ZIRANDANGACHO

The former pueblo of Zirandangacho (Tzirandangacho, Tzirandangatzio, Çerandacho, Sirandagacho, Serandanguacho, etc., in various documents) at present scarcely deserves the title of rancho. Situated less than a mile southeast from Quiroga, at an elevation of 2,042 meters, Zirandangacho is hardly more than a slightly removed suburb. All of the farmlands are owned by a Quiroga family (the Barriga brothers) and a Morelia family (the intermarried Villanueva-Villaseñor-Zamudio group), and the residents in the rancho settlement are little more than the laborers on the adjacent farms. The present community of Zirandangacho is located where a ridge extending south from the Cerro Tucurullo intersects the Llano de Tzintzuntzan, and the exact location along this line of intersection was determined by the presence of an excellent spring a few rods out from the base of the ridge. That this area contained the former pueblo of Zirandangacho is indicated by the many potsherds, artifacts, and burials that occur along the slopes and in the *llano* immediately to the north of the present settlement. Furthermore, the many little springs and marshy areas between Zirandangacho and the Arroyo del Cerro Azul toward the west coincide with the 1603 complaint that the lands of this pueblo were swampy or exhausted. This Pueblo de Zirandangacho (under many variants of the name) was the most mentioned in the records of the sixteenth century of any of the settlements within our area of study. Apparently a combination of loss of population from epidemics and loss of lands through encroachment of whites reduced the community by 1603 to a condition of insignificance from which it never has recovered. The chapel which existed in the early colonial period when Zirandangacho was a *visita* of Tzintzuntzan has been in ruins for more than a century, and little more remains to indicate its former existence than an open rectangle at the margin of the *llano* (La Plazuela de Zirandangacho) outlined by large and old ash, cypress, and avocado trees. There is but one mulberry tree, and a *predio* known as El Moral, to recall the presumptive origin of the name *ziran anacho* (where there is the small mulberry tree). Since May 3 is the main day of *fiesta* for Zirandangacho, the assumption is that the avocation of the pueblo and chapel was Santa Cruz.

Since all the heads of family are either laborers (4) or share croppers (5) for Barriga or Zamudio, and only 3 own *solares* in Zirandangacho, it is rather pointless to outline the boundary of the rancho or to detail the economy. Roughly speaking, the lands owned by the Barriga and the Villaneuva-Villaseñor-Zamudio which are immediately around the settlement can be considered a part of the rancho. The crops raised and the livestock run on these holdings are considered under Quiroga. The settlement itself consists of the ruins of some 20 adobe and stone structures, and 7 houses—all of which are 1 story of adobe with tiled roofs of *dos agus*. Included in the population are the 2 families of employees of Leonardo Zamudio who live in a 2-story house near some corrals at a distance to the southeast and in a small house near the main storage barn or *jacal* and a threshing floor. The total population in 1945 was 52; in 1940, 24; in 1930, 34; in 1921, 24; and in 1900 it was 72. There is no chapel, store or *tendajón*, or school, and all of the inhabitants are illiterate. The water used is carried from the spring, which has a strong run-off and is used also to water livestock, for washing clothes, and to irrigate some nearby wheat fields. Formerly Coronel Villanueva irrigated an alfalfa patch with these waters. On and around their small house plots the inhabitants keep a few animals, such as 22 hens and roosters, 4 turkeys, 2 pigeons, 4 cows and calves, 1 pig, 3 burros, 5 horses, 43 beehives, and 11 dogs and 2 cats. As was true for La Tirímicua, these figures are too low. In the settlement there are a number of willow trees by the spring, a scattering of 29 peach trees, 6 lemons, 5 cypresses, 3 white *zapotes*, 3 avocados, numerous ash trees around the *plazuela* and along the highway, many agaves and cactuses along the fences and over the hillside, etc. The highway which passes between the settlement and the spring formerly was of great importance, since from 1886 until the revolution most of the movement of goods into and out from Quiroga passed along this highway which led to the railroad station of Chapultepec some 7 miles distant. Among the luxuries present in Zirandangacho were three sewing machines, one wooden bed, one cot, one maize mill, and about a dozen flower pots with "geraniums."

QUIROGA TOWN

(MAP 4)

Having discussed all of the permanent ranchos, there remains only the *villa* or town of Quiroga itself among the settlements in our area of study. Previously we have outlined what is known of the development of this settlement during the sixteenth and seventeenth centuries. There is practically nothing more to be added until the period of independence after 1822. By this time we know that Cocupao had become the seat of a municipal government, and that its population included whites, mestizos, and mulattoes, as well as Indians. Tradition, as obtained about 1874 by Nicolás León from old inhabitants, claims that the pueblo was burned to the ground in May 1811 by a revolutionary chief (Padre Antonio Torres, a native of Cocupao) so that it could not give shelter to royalist forces. Since all of the houses probably were of wood with roofs of shakes or grass it is quite likely that the tradition is true, at least as far as a great fire that wiped out the village. It was also claimed that the village church, former Franciscan convent (Cocupao was secularized in 1786), Indian hospital and chapel, and all associated structures were destroyed at the same time. The present parish church presumably was built some time between 1812 and 1818. Granting the total obliteration of all structures in Cocupao in 1811, probably the resettlement that took place in the quiet years of the revolution against Spain (1816 to 1821) took the same lines as the earlier settlements since each family would rebuild on its traditional *solar*. There is no known basis for León's assumption that at this time Cocupao moved from La Tepóricua to its present site. In 1827 the State congress passed a law requiring the pueblos and larger settlements of Michoacán to be divided or organized into quarters (*cuarteles*) and blocks (*manzanas*). As we have no detailed records of Cocupao until 1860, we can only assume that this was done. Up until this date presumably Cocupao had only the division into *barrios* and a few streets with names.

We have already listed and located the four *barrios* of Cocupao, and given our opinion that they originated with four nuclear communities that went into the make-up of the pueblo in 1534. There is no indication that any of these *barrios* might represent differences in dialect or occupation, or sib groupings and landowning groups, as was sometimes the case elsewhere. It is of some interest that San Miguel is represented as a *barrio* name in most of the Michoacán towns with which we are familiar, but the other three names represented in Cocupao (San Francisco, San Bartolo, and La Ascensión) are not so common. After San Miguel the most popular names are San Pedro, María Magdalena, San Juan, and Santiago. Apparently there was a tendency in Michoacán pueblos to have either four or eight *barrios* (this type of *barrio* is not to be confused with the term as applied to an outlying dependent community). Perhaps this tendency stemmed from the fact that four was the most popular and esteemed number among the Tarascans. Only one street name is definitely known from the pre-Independence period—that of the Calle Real. As was true with nearly all Spanish-American communities in colonial days, the Calle Real (Royal Street) was the main thoroughfare of the community. It is somewhat puzzling that the former Calle Real was not what is now known as the Calle Nacional (passing between the church and the municipal palace) but was the street now termed Calle Zaragoza which extends west from the center of town between *cuarteles* I and II, and in front of the Plaza de la Constitución. Perhaps an answer to the puzzle is the alternative name for this plaza which is "Plaza Vieja" or "The Old Plaza." Possibly the main market square or plaza of Cocupao was here at some time prior to 1858, but this supposition encounters a difficulty in the fact that half of this plaza belonged to Santa Fe until it was purchased in 1861. There is, of course, the possibility that Santa Fe and Cocupao held a joint market in this plaza. At all events, we can be fairly certain that Cocupao, like Pátzcuaro, never had any religious buildings fronting on its largest or principal plaza. What Toussaint (1942, p. 202) mistakenly has labeled Plaza Antigua, in front and to the west side of the parish church, never was the principal plaza of Quiroga. The area in front of the church was the cemetery, which was replaced in 1850 by the Panteón Civil erected on the northeastern outskirts near La Tepóricua. The area to the west of the church, now known as the Plaza de los Mártires, and where the market is held, did not exist until some time in the 1860's (after the French Intervention) when the old municipal buildings (office of the *ayuntamiento*, jail, etc.) which occupied this site were torn down

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and the plaza was inaugurated and named after some prisoners of war who were shot here by Mexican Imperialists in 1866. As early as 1858 the term "Plaza Principal" was applied to the small but centrally located plaza, surrounded on three sides by *portales* constructed 1861–63, which still bears this name. And as early as 1860 the present Plaza de la Constitución was being referred to as the Plaza Vieja. The three plazas that we have just mentioned are the only plazas in Quiroga, although there are a number of small "squares" or *plazuelas* which are discussed later.

STREETS

Our discussion of the development of divisions, streets, plazas, leading buildings, etc., in Quiroga is based primarily on a study of the minutes of the municipal cabildo, the records in the civil register, a few inscriptions, several old property titles, and the recollections of some of the older inhabitants (which last item caused more confusion than it provided help). The growth of Cocupao is indicated by its elevation to Villa de Cocupao de Quiroga in 1852, and its separation from Tzintzuntzan and establishment as an independent parish or curacy in 1853. During the 1850's the new cemetery was inaugurated, a chapel of San Miguel was erected in the *barrio* of that appellation, the ruined church of the old Indian hospital (known as the temple of La Concepción) was restored, a fountain or *pila* with a statue of "America" (the figure of a woman at the top of a shaft) was erected in the Plaza Principal, the parish church was repaired after the damages wrought by the great earthquake of June 19, 1858, and numerous streets were openéd up and several bridges were built over the Arroyo de Quiroga and other streams which pass through the town. As of about 1859 there were reputed to be 40 streets in Quiroga. This figure is misleading since what we would call a street five blocks in length would be broken up into as many streets as there were blocks; i. e., a grid of five north-south streets intersecting five east-west streets would provide 40 different street names, although a few of the more important routes or streets might retain the same name for several blocks.

STREET NAMES

The evolution of the street names in Quiroga provides an interesting sidelight on national and local history. The names can be divided into three groups: (*a*) Names of local significance and mainly from the colonial or early republican period, (*b*) names of heroes of the revolt against Spain (1808–21), and (*c*) names of heroes of the Wars of Reform (about 1854–61), and names of heroes of the French Intervention (1862–67). The paucity of names from the Díaz period and from the Madero revolution is noteworthy. With changes in the political complection of the *ayuntamiento* there were commonly changes in street names. Furthermore, a certain name might be applied to a street in one part of town at one period, be discarded by a later *ayuntamiento*, and still later be resurrected and applied to a street in some other part of town. Although the location of a number of the streets has not been determined, we give below the names in the various classes. If general or exact location of a street is known, it is preceded by the roman numeral indicating the *cuartel*. Names in capital letters are still in use, either commonly or officially; only the portion of the name most frequently used is capitalized; e. g. (Pablo de) LA LLAVE, or Manuel DOBLADO. The names within parentheses, just after the name being discussed, represent past or present synonyms. The meanings of common names are given in English, and the importance of individuals is given in brief form. The dates, after the listing, indicate last mention encountered (–1861, for example), first mention (1873–), or period of mention (1909–13).

Local names, probably of colonial origin

Abasto Viejo (Rastro Viejo), slaughterhouse abandoned prior to 1860 and not to be confused with the present street of that name.

II AGUA, water.

Alamo, poplar, –1861.

II ALCANTARILLA (AGUACATE, González Ortega), water tower or fountain.

II and III Alcantarillas (CALVARIO, n. Nacional, RAMON CORONA), underground conduit.

Atascal, barrier or miry place.

II BAÑO DE CABALLOS, horse bath.

II Buenavista, good view, –1913.

Cadena, chain, –1863.

II and III CALVARIO (n. Nacional, RAMON CORONA), calvary.

Canela, cinnamon, –1863.

Cerbatana, culverin or blowgun, –1861.

III Chirimoyo, Cherimolia, –1929.

I CORONA (s. REFORMA), crown.

III and IV CRUZ (e. JUAREZ), cross.

MAP 4.—Plan of the Villa de Quiroga, Michoacán, 1945.

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Cuatro Esquinas, four corners, –1862.
I CUERNO (TRANCHETE, Comonfort), horn.
Culebra, snake, –1861.
IV CURATO, parish house, –1860.
Escondida, hidden,–1868.
Herreros, blacksmiths, –1862.
I Huerta (TACON), orchard, –1913.
IV JAZMIN, jasmine.
Laurel, laurel, –1873.
Limones, lemons, –1863.
Manzanillo, little apple, –1863.
Mesquite, mesquite, –1863.
IV MONTANA, hill.
Muta, pack of dogs, –1863.
Moral, mulberry tree, –1863.
I NOPALERA (Nopales), cactus patch.
II OLIVO (Comonfort), olive.
IV Ontiveros (SALAZAR), family name, –1910.
Oripondio, oriole ?, –1861.
Palma, yucca, –1862.
Panaderos, bakers, –1863.
IV PARROQUIA, parish church.
II PLAZA VIEJA (PLAZA DE LA CONSTITUCION), old plaza.
Plaza de Gallos (Plaza Vieja de Gallos), cockpits, –1863.
Puente Chico, little bridge, –1863.
I and II REAL (ZARAGOZA), royal.
Recodo, crook or turn, –1863.
III RETRAIDO, retreat.
Zapote, white zapote, –1861.
Zarza, bramble, –1862.

Local names, probably or certainly post-colonial

IV Abasto (Corrales, Rastro, RASTRO or ABASTO VIEJO), slaughterhouse, –1925.
Alameda, poplar lane, 1902.
II ARCO, arch of aqueduct, 1873–.
I Artesano, artisan, 1873–1913.
III BASURERO (n. GALEANA), trash heap.
Boliche, a small ball, 1902.
Campana (DOBLADO), bell, –1862.
III CAMPOSANTO (CEMENTERIO, PANTEON, e. DOBLADO), cemetery, 1850–.
I CARRERAS (Mina, w. Cuauhtemoc), race track or course for horses, 1869–.
III Carrizal, cane clump, 1909–13.
Chivo, goat, 1912.
III and IV CONCORDIA (SORPRESA), concord or harmony, 1872–.
Estación Vieja, old stage station, –1861.
Gesto, grimace, or feat, 1913.
H, "H" street, –1862.
I INDUSTRIA (Fábrica –1861, Progreso 1861–1910), industry, 1910–.
II JARDIN, garden, 1901–.
Miedo, fear, 1905–1912.
I MUELLE (EMBARCADERO), dock or pier, 1887–.
I NUEVA (w. ITURBIDE), new street, 1860–.
II and III PLAZA PRINCIPAL (JARDIN BELISARIO DOMINGUEZ), main square, from as early as 1834–.
I PLAZA DE TOROS (s. REFORMA), park for bull fights, 1901–.
Pliego, sheet of paper or package of papers, 1874–77.
III and IV PUEBLO or BARRIO NUEVO (e. Zaragoza, e. JUAREZ), new town, 1872–.
Ratón, mouse, 1913.
II Reparo (Reposo, Retiro, Recreo), restoration or repose, 1900–1913.
Rincón, inside corner or nook, 1875.
III and IV SORPRESA (CONCORDIA), surprise, 1902–.
II Susto, fright, 1905–1909.

Names of revolutionary heroes, 1808–22

II (Mariano) ABASOLO; general under Hidalgo 1810–11; 1901–.
I (Juan) ALDAMA; captain under Hidalgo 1810–11; 1907–.
III Portal (Ignacio) ALLENDE (Portal Iturbide 1878); with Hidalgo; 1862–.
I Pila and plazuela of (Nicolás) BRAVO (de los Naranjos to 1863; Degollado 1863–1901); great revolutionary from Guerrero under Morelos and then Iturbide, and president several times; 1901–.
III and IV (Hermenegildo) GALEANA; warrior from Guerrero under Morelos 1813–14; 1863–.
III and IV (Vicente) GUERRERO: greatest general from Guerrero 1811–21, and president 1829–30; 1863–.
II Portal (Miguel) HIDALGO y Costilla; beginner of the revolution 1810–11; 1861–.
I JIMENEZ; probably named for the associate of Hidalgo, but possibly after Mariano Jiménez, governor of Michoacán 1885–91; 1906–.
II (Pablo de) LA LLAVE (n. Reforma, NEGRETE), priest, botanist, and statesman from Veracruz who lived in Michoacán for a time; 1902–.
III (José Nicolás) MICHELENA; leader of Valladolid conspirators; 1903–.
III (José María) MORELOS y Pavón; leading general 1811–15; from before 1860–.
III Portal (Mariano) MATAMOROS (Portal Morelos 1861–63); chief lieutenant of Morelos 1812–14; 1864–.
I and IV Pila and plazuela of (Francisco Javier) MINA (Pila and plazuela de los Negros); Spanish guerrilla and adventurer killed in Guanajuato 1817; 1864–.
I and IV Mina (CARRERAS and JAZMIN); 1868–1917.
II (Pedro) NEGRETE (n. Reforma); revolutionary and member of the regency 1822–23; 1902–.
I (Ignacio López) RAYON: lieutenant of Morelos; ca. 1916–.
IV VICTORIA, probably named after Juan Felix Fernández of Durango who took the name Guadalupe Victoria, was undefeated in the revolution and was first president 1824–29; 1864–.
Congreso; probably from 1813 and 1814 congresses in Chilpancingo and Apatzingán; 1909.
I and IV NACIONAL (formerly all of RAMON CORONA also); national street; from before 1860–.
III Patriota (DOBLADO); patriot street; 1864–1911.

Names of heroes of the Reform period and the French Intervention 1854–67

I Juan ALVAREZ (TACON); hero from Guerrero of 1811–21 revolution, Plan de Ayutla 1854–55, president 1855, fought against French 1862–67; 1905–16, and still used occasionally.

III José María ARTEAGA; liberal general from Mexico shot in Uruapan 1865; 1904–.

IV Felipe BERRIOZABAL (GALEANA in part); liberal general 1850's; 1901–.

II Ignacio COMONFORT (OLIVO and CUERNO); liberal general from Puebla in Wars of Reform, president 1855–58, fought French 1862–63; 1921–.

II and III RAMON CORONA (CALVARIO, n. Nacional, Vasco de Quiroga); liberal general and leader against the French, from Jalisco; 1901–.

I DEGOLLADO; named for Santos Degollado or his brother Mariano Degollado, both of whom were liberal associates of Ocampo and often visited Quiroga; 1863–.

III Manuel DOBLADO (Campana, Patriota, w. Panteón); liberal leader from Guanajuato; 1901–.

I ITURBIDE (CALLE NUEVA and JIMENEZ); named for either Colonel Andrés Iturbide, a cavalry officer from Michoacán who was killed in 1858, or from another Michoacán liberal and associate of Ocampo who frequently visited Quiroga—Manuel Iturbide Mayor; 1863–.

II GONZALEZ ORTEGA (LA ALCANTARILLA, EL AGUACATE); defender of Puebla against the French 1863; 1902–.

III and IV BENITO JUAREZ (PUEBLO NUEVO, e. Zaragoza); liberal judge, minister, and president 1855–72; 1901–.

III Miguel LERDO DE TEJADA; minister and justice who published the so-called Ley Lerdo in 1856; 1863–.

II Melchor OCAMPO; great liberal governor 1846–52 after whom the State is named Michoacán de Ocampo, and author with Juárez of the Ley Lerdo; ca. 1852–.

IV Manuel García PUEBLITA; military commander of Michoacán 1864–65, who defeated French in Quiroga 1865; 1902–.

IV Carlos SALAZAR; liberal general from Tamaulipas shot in Uruapan 1865; 1901–.

II and III Plazuela de VALLE; individual referred to is uncertain; 1879–.

I and II Ignacio ZARAGOZA (CALLE REAL; formerly all of Juárez also); Mexican general who won the first battle of Puebla from the French May 5, 1862; 1863–.

II Plaza de LA CONSTITUCION (PLAZA VIEJA, Plaza de los Republicanos, Plaza Nacional); the great liberal Constitution of 1857; 1868–.

IV Plaza de LOS MARTIRES; Mexican prisoners of war shot in Quiroga 1866; ca. 1867–.

I REFORMA (formerly all of NEGRETE, LA LLAVE; includes LA CORONA, PLAZA DE TOROS); the LEYES DE LA REFORMA published by Juárez in 1859; 1863–.

A number of other names have been applied to the streets of Quiroga, but this was chiefly on paper. About 1910 and until the revolution one street was named after Governor Aristides Mercado, but with the possible exception of Governor Jiménez there were no other Quiroga streets named after Porfirio Díaz and his henchmen. A new slate of names was prepared about 1921–23, but of the new names (such as Cuauhtemoc, Vasco de Quiroga, Colón, Altamirano, Bustamante, Escobedo, and Melgar) the memory of only a few has been retained. In 1943 there was proposed to the *ayuntamiento* the renaming of some of the streets after heroes of the Madero revolution (among the names proposed were Lázaro Cárdenas, Venustiano Carranza, and Francisco I. Madero), but none of these names was ever approved. In 1946 we proposed some names for lanes and streets currently without names, and these were entered by the *ayuntamiento* on the map of Quiroga which we had prepared, copies of which were presented to the *ayuntamiento*, the tax collector, and the postmaster. The names proposed were those of individuals connected with the history of Quiroga or the entire Pátzcuaro Basin (Riva Palacio, Francisco de Paula Placencia, Vicente Elizarraras, Trinidad Valdés, Antonio Torres, Calzontzin, and Tariácari), but it is still too early to determine if any of these names have "caught on" with the citizens of Quiroga. Recently (since 1937) the local Sinarquistas improved the portion of La Concordia leading to the cemetery and placed a marker naming that portion Los Mártires del Sinarquismo (the Martyrs of Sinarchism).

The inhabitants, from colonial times to the present, have tended to name the streets upon which they live after salient objects or notable local events. Names of large or unique trees and shrubs are common (Aguacate, Chirimoyo, Jazmín, Mesquite, Olivo, etc.) although in most instances these trees have long since disappeared. Such names as Alcantarillas, Plaza de Gallos, Plaza de Toros, Estación Vieja, Fábrica, Muelle, Jardín, and Huerta, recall in many instances establishments which do not now exist, but they enable us to reconstruct the social and economic history of the community. The two streets named after guilds, or occupations, imply a concentration in special areas of the bakers and blacksmiths, but we are not certain of their location

(Herreros was probably the present Calle de Negrete, and possibly Panaderos was the present Guerrero). We can only guess what events are commemorated by such names as Chivo, Culebra, Escondida, Concordia, Sorpresa, Susto, Miedo, Gesto, etc. Despite all names applied by the *ayuntamiento*, the residents of the streets away from the center of town continue to use the older local names. Also, owing to the many changes, it is common for a given street to be called differently by the different generations of residents; e. g., what the officials and younger people term Ramón Corona is known to older residents as Nacional, or Alcantarillas, or Calvario.

Although we have seen titles of the eighteenth century with a few street names, and though a State law of 1827 required the division into *cuarteles* and *manzanas* (which presupposes streets with names), there is no evidence that any street name plates or signs were in use prior to about 1860–63. In the periods just after the Wars of Reform (1860–64) and the French Intervention (1867–73) there was much activity in opening new streets, building bridges, numbering the houses, applying patriotic names, and constructing a map of the town (which was reported lost in 1869). The heroes of the revolt from Spain were given preference at first, and the three porticos or *portales* erected on three sides of the Plaza Principal (1861–62) were named after Hidalgo and two of his lieutenants (Morelos—replaced in 1864 by Matamoros, and Allende). The use of these men's names for *portales* is especially common in Michoacán. The State of Michoacán has been fortunate in subjects for names since the majority of the revolutionary heroes were natives of Michoacán proper or of the former province which included Guanajuato (e. g., Hidalgo, Morelos, Allende, Abasolo, Aldama, Bustamante, Iturbide, Michelena, Matamoros, Rayón, etc.). Michoacán and Guanajuato also provided many of the great liberals of the reform period and war against the French, and a number of these were personally known in Quiroga (such as Ocampo, Degollado, and Doblado). A number of names of liberals were affixed to streets in 1863; were removed during reactionary periods 1864–67 and 1872–76; and were restored with the coming to power of Díaz in 1876. The Díaz regime sponsored and cultivated order in all forms, including street names, which was most marked 1891–95 (cuarto-centennial of Columbus, national census, maps of all towns—that of Quiroga of 1895 also was lost), from 1900 to 1905, and in 1910 (centenary of the movement for independence). Especially in 1901 and 1902 there were many streets in Quiroga renamed for patriots of the revolt from Spain and for heroes of the Reform Wars and French Intervention. It is indicative of Quiroga's adherence to local heroes that such great out-of-state heroes as Bravo, Alvarez, and Juárez were not represented until this time. The last important period of name changes was 1921–23 (commemoration of Independence), but these names did not last.

PATTERN

The present form of Quiroga town is that of an asymmetrical lozenge based upon a north-south axis (Ramón Corona-Plaza Principal-Nacional) 1,631 meters long, and an east-west shorter axis (Benito Juárez-Zaragoza) 1,283 meters in length. The orientation is askew about 5° to 25° in different parts of town; no street is perfectly straight; and no block is a perfect rectangle. The intersection of the two axes (*ejes*) divides Quiroga into four quarters or *cuarteles* which are numbered clockwise beginning with I in the southwest quadrant. The series of truncated triangular and asymmetrical polygonal blocks in the zone of contact of the four quarters would seem to indicate that the four *barrios* expanded or grew from eccentric nuclei toward the official center of town and filled the vacant irregularly shaped space with the only forms of *manzanas* possible. Until the middle of the previous century the shape of Quiroga was that of a crossroads string town with most of the population along or near the north-south street which was a segment of the road from Pátzcuaro to Chucándiro and Lake Cuitzeo, and a minor distribution along an east-west route (between the springs of La Tepóricua and Atzitzíndaro) by which passed some traffic between Morelia and Santa Fe, Zacapu, and other settlements to the west. This east-west line was presumably the boundary of the Barrio de San Miguel against the *barrios* of La Ascensión and San Francisco. In 1861 the town acquired the equivalent of some 10 or 12 blocks at the west side of town by purchase from Santa Fe; and in 1871 the area east of Berriozabal-Galeana was purchased from members of the Comunidad de Indígenas de Quiroga and di-

vided into *solares*. From the 1860's to the Madero Revolution growth took place in all four directions, but most importantly to the west around the Plaza Vieja. From 1914 to 1928 (owing to the revolution, bandits, Cristeros, et al.) many houses were abandoned, especially at the west and in the north where there are to be seen the greatest number of ruins of adobe houses. Recent growth has been out along the axial lines in all directions excepting toward the north. This is an expression of the paved highways which lead to Morelia 27 miles to the east, to Pátzcuaro 16 miles south, and Zacapu 27 miles to the west.

Formerly there was an attempt to have a few streets cross the entire town in both directions: East-west—Zaragoza (Benito Juárez and Zaragoza) and Mina (Jazmín and Carreras); north-south—Reforma (La Llave, Negrete, Reforma), Nacional (Ramón Corona, Plaza Principal, Nacional), and Galeana (Basurero, Galeana, Berriozabal, Abasto Viejo). At present no street carries the same name for more than 6 blocks (only Zaragoza extends through 6 blocks), and but 11 streets have more than 2 inhabited blocks (Zaragoza 5, Nacional 5, Berriozabal-Galeana 4, Juárez 4, Ramón Corona 4, Morelos 4, Reforma 3, Doblado 3, Ocampo 3, Victoria 3, and Iturbide 3). Three streets (Guerrero, Galeana, and La Concordia) extend from *cuartel* III into *cuartel* IV for distances varying from a half block to 1 block.

SUBDIVISIONS

The division of Quiroga into numbered blocks presumably began in 1827. The blocks or *manzanas* in each *cuartel* are numbered so that censuses and other records can locate a person or family by stating, e. g., house No. 32 on street Reforma in the sixth block of the first quarter. Every *manzana* has two numbers: its current number within the *cuartel*, and its number along a given street; e. g., the most northerly block on Ramón Corona (on the west side) is Manzana 7[a] of *cuartel* II but it is also the fourth *manzana* of the Calzada Ramón Corona. Although presumably the block numbers within the quarters are fixed, they actually vary with the whim of the *ayuntamiento*, census takers, map makers, and anyone else interested in the matter. In part this is because of the settling and abandoning of peripheral *manzanas*. Since the numeration begins with the *manzana* nearest to the "four corners" of the *cuarteles* and proceeds northward or southward by tiers, it is evident that if the outermost *manzana* in the first tier is abandoned it will cause a renumbering of all the *manzanas* that come after it. Furthermore, often when there is a peripheral *manzana* with only two or three families it will be included with an adjacent *manzana*. In table 1 we present the logical numeration of all *manzanas* with any permanent inhabitants (column 2) and the equivalent numeration of other censuses and periods. The *manzanas* have been grouped by tiers, set off by lines. Where blocks still retain old signs these numbers are indicated; the other numbers in parentheses in that column indicate the complete numeration consistent with the signs. It will be noted that at one time *manzanas* were numbered east and west from Calle Nacional in *cuartel* IV.

TABLE 1.—*Numeration of manzanas in Quiroga*

Cuartel	Manzanas					
	1 Complete, logical	2 Inhabited, logical	3 Our map of 1945	4 Municipal list 1945	5 Census of 1940	6 Old signs
I	1	1	1	1	1	(1)
	2	2	2	2	2	2
	3	3	3	3	3	(3)
	4and4A	4and4A	4and4A	4	4	(4)
	5	5	5	5	5	(5)
	6	6	6	6	6	(6)
	7	7	7	7	7	(7)
	8	---	7A	---	---	(8)
	9	8	8	8	8	(9)
	10	9	9	9	9	10
	11	10	10	10	10	(11)
	12	11	11	11	---	(12)
	13	---	12	---	---	(13)
	14	---	13	---	---	(14)
	15	---	14	---	---	(15)
II	1	1	1	1	1	1
	2	2	2	2	2	2
	3	3	3	3	3	3
	4	4	4	4	4	4
	5	5	5	5	5	(5)
	6	6	6	6	6	(6)
	7	7	7	7	7	7
	8	8	8	8	8	11
	9	9	9	9	9	(10)
	10	10	10	10	10	9
	11	11	11	11	---	8
	12	12	12	11A	---	12
	13	13	13	12	---	(13)
	14	---	14	---	---	(14)
	15	---	15	---	---	(15)
	16	---	16	---	---	(16)

TABLE 1.—*Numeration of manzanas in Quiroga.—Con.*

Cuartel	Manzanas					
	1	2	3	4	5	6
	Complete, logical	Inhabited, logical	Our map of 1945	Municipal list 1945	Census of 1940	Old signs
III	1	1	1	1	1	(2)
	2	2	2	2	2	3
	3	3	3	3	3	4
	4	4	4	4	4	(5)
	5	5	5	5	5	(1)
	6	6	6	6	6	(6)
	7	7	7	7	?	----------
	8	8	8	9	8	(7)
	9	9	9	10	9A	8
	10	10	10	8	7	(9)
	11	11	11	11	10	(10)
	12	12	12	12	9	(11)
	13	13	13	13	11	(12)
	14	14	14	13A	----------	(13)
IV	1	1	1	1	1	1
	2	2	2	2	2	(8)
	3	3	3	3	3	9
	4	4	4	4	4	(2)
	5	5	5	12	5	(7)
	6	6	6	5	6	10
	7	7	7	6	7	(13)
	8and8A	8and8A	8and8A	7	8	(14)
	9	9	9	8	9	(3)
	10	10	10	9	11	(6)
	11	11	11	10	12	11
	12	12	12	11	13	12
	13	13	13	13	14and15	(4) and (5)

SIGNS AND NUMBERING

Four streets are oiled or asphalt-surfaced—the streets traversed by the Morelia-Guadalajara highway (Benito Juárez and Zaragoza), the street on which the branch highway turns off to Pátzcuaro and Tacámbaro (Calle Nacional), and the cut-off connecting the Pátzcuaro road with the Guadalajara road at the southwest of town (Carreras). These streets were surfaced in 1938 and 1939, at which time it was necessary to widen Benito Juárez and Zaragoza by cutting away the fronts of all of the houses along the south side of the street. As one consequence, there are no signs indicating *cuartel* or *manazana* numbers or giving the names of streets in the northern portions of *cuarteles* I and IV. In all the town there are only 25 name signs (painted in black on whitewashed walls of buildings) which give the identity of 20 streets. Considering the local usage of applying a street name to distances varying from ½ block to 6 blocks, there are 119 "blocks" or segments of streets within the limits of Quiroga, which carry 52 different names (including *plazuelas* and *portales*) and eight streets are without names. This means that only one-third of the streets are posted. There are 89 occupied "blocks" on 51 streets and plazas. At least three systems of house numbering have been applied in recent times, since we found a number of houses having 3 different numbers, each number being painted in black with a different type of stencil. Away from the central streets the numbering at present is chaotic. The preservation of numbers from earlier times, the eradication of numbers by whitewashing or loss through weathering, the abandonment and complete elimination of houses that formerly occupied a place in a sequence, and the subdivision of *solares* and erection of new houses for which there was no place in any sequence used previously, have combined to make the sequence of house numbers on some streets highly irregular and misleading. As an example we give the sequence of current house numbers on the west side of Ramón Corona (older numbers are within parentheses): 1 (80), 3 (4), 5 (78), 7, (76), (74), (72), 13, 17, 19, 21 (66), 23 (64), 25; 27 (24, 62), 29 (26), 31 (58), 33, 35, 37, (50), 41, 43, 45 (44), 47 (40, 42), 49 (40, 42), x, x, x, 55, 57 (48); 59 (50), 61 (52), 63, 65 (54), 67, 69, 71, 73, 75 (66), 77, x, 81 (68), 83 (70), 85, x, 87, 89, 91, 93, 95; x, 97 (82), x, 99 (84), 101, 103, 107, (73, 88), x, x. Although the odd numbers are commonly on the left side as one goes out from the center of town, it will be noted that at one time the reverse procedure was in vogue. It should be mentioned that in Quiroga, and commonly elsewhere in Mexico, numbers are continued in alternating sequence from block to block. In the example given above four blocks were involved, which are set off by semicolons.

PAVEMENT

At one time, prior to the Madero Revolution, all four axial streets were paved with cobblestones, and most of the other streets within three blocks of the center were paved in the same fashion. In recent years there has been little or no attempt to keep the streets in repair; and one encounters a regular sequence, going out from the center, of fully cobblestoned streets, degenerated pavement with many stones missing, and dirt streets that probably never were paved. At least 20 streets have no pavement of any description. These dirt streets are usually far more pleasant to walk upon than are the cobblestone streets; but the stone

pavement prevents the cutting of trenches by pack animals proceeding in single file, and during the rainy season the uneven but solid surface of the cobblestones is preferable to the mud lanes into which many of the dirt roads are converted. A number of the cobblestoned streets, especially those that run downhill from north to south, slope in toward the middle so that a central gutter is provided for the run-off of the rainy season. Many of the town houses have the privies located against the blind wall facing such a street so that the liquids can run out (through a stone-slab conduit under the sidewalk) to the gutter. The sidewalks vary in location and material about as do the streets. Along the oil-surfaced streets the sidewalks are commonly of asphalt over crushed rock with a cement guard on the street side. Elsewhere, along the cobblestoned streets, the sidewalks are also of cobblestones, usually raised a few inches above the general street surface. The sidewalks differ from the streets in having smaller stones which are so fitted that a nearly flat surface is produced. In front of the houses of some of the wealthier residents the sidewalk is often of fitted flat stones or of large bricks. Along the dirt streets about half of the houses have sidewalks fronting the *solares*, and these sidewalks are commonly composed of a number of flat stones embedded on their sides so as to form a geometrical pattern with the interstices filled with earth. There are a few blocks with cement sidewalks, and these are on Zaragoza, Nacional, and Benito Juárez. The Government, after a delay of several years, poured the last of these in March of 1945. The width of streets and sidewalks varies greatly, but in general the greatest widths are to be found on the four main streets and the least are on minor peripheral streets known as *callejones*. The streets come in about four sizes: a few ranging between 13 and 18 meters, the majority averaging 8 meters and 10 meters, and a few ranging from 5 to 6 meters. The associated sidewalks vary from nonexistent up to about 1½ meters in width.

GENERAL APPEARANCE

The general appearance of Quiroga is quite attractive, especially from July to February when the vegetation is greenest, the flowers are the most abundant and most colorful, and the houses and landscape in general have not taken on the sere and dusty aspect of the dry season. If one approaches Quiroga by highway from the east, the first view (as one rounds the curve on the downgrade from Atzimbo) is of many adobe houses with red-tile roofs nestled in a cove where the lake plain meets the northeastern slopes and hills. To the north the houses straggle up a slope to El Calvario where the dun-colored Yácata de la Princesa (or del Calvario) and the white walls of the Federal rural school (partly obscured by the pointed cypresses of the former chapel of San Miguel) mark the upper limit of town. Five concentrations of trees attract the attention. On the right hand, at the northeast corner of town, is the cemetery with its gloomy cypresses and statuesque eucalyptuses—surrounded by a high adobe wall. In the middle foreground, just to the left of the highway and main street (Benito Juárez), is the white tower and front of the chapel of San Vicente—nearly obscured by a mixture of ash, cypress, avocado, etc. In the center, just right of the main intersection, are the tall ash trees that mark the Plaza Principal and which serve as background for the white tower on top of the Hotel Central. In the distance, on the right side of the angled continuation of the main street and highway (Zaragoza), appear the tops of the ashes and cypresses of the Plaza de la Constitución. To the left of center, and just east of the Calle Nacional, are the scattered ashes and cypresses of the Plaza de los Mártires and the front yard of the parish church, this side of which looms the mass of the parish church surmounted by its truncated bell tower. Barely visible beyond the church, on the other side of the Calle Nacional, is the clock tower on top of the old hospital church of La Concepción. The remaining large structure in Quiroga, the municipal building, is just south of La Concepción but is hidden by the mass of the parish church and the attached parish house. In the distance to the west can be seen the white church tower in Santa Fe, about 3 miles distant. On the southwest, past cultivated fields and the humped outline of the Cerro Huarapo, shimmer the waters of Lake Pátzcuaro about 1 mile away.

The charming bosky appearance of Quiroga does not derive so much from the trees in plazas and along streets as it does from the fact that practically every home (all but about a dozen) has a yard or patio in which are grown a number of ornamental and fruit trees and shrubs. There

are few real orchards (less than 20 in fact or name), and the majority of Quiroga's fruit trees are to be found scattered in small groupings over the entire town. The leading fruit trees are peaches (1,389), limes (166), figs (155), apricots (119), oranges (103), avocados (96), loquats (79), white *zapotes* (78), guavas (73), lemons (68), quinces (62), and cherimoyas (60); however, the more numerous fruit trees do not attain the size of the *zapotes*, avocados, cherimoyas, and native cherries (*capulines*) which vie with the strictly ornamental trees for prominence in the landscape. The *fresnos* or native ash trees (*Fraxinus uhdei* (Wenzig) Lingels) are probably fewer than 200 in the entire town (we counted 166), but they constitute the chief formal plantings along the main streets (principally the Calzada Ramón Corona which has nearly 40) and in the three plazas; and it is these *fresnos* (*paramu* in Tarascan) which provide the largest trees and the most shade. Next in importance among the formally planted ornamental trees are the cypresses (of at least three species). There are approximately 80 *cipreses* (also known erroneously as *cedros*), which are principally in the churchyard, the cemetery, and the Plaza de la Constitución. In recent years there have been planted about 30 privets or *truenos* (*Ligustrum lucidum* Ait.), chiefly along the parish house and on lower Ramón Corona. Also, in the past 15 years some 20 jacarandas and 18 casuarinas have been planted in different parts of town; the jacarandas are principally in the Plazuela de Bravo and the Plazuela de Valle, and the casuarinas are in private yards. The *gigante* or eucalyptus was first planted in Quiroga in the 1870's, but outside of the dozen *Eucalyptus globulus* Labill. (and perhaps another species) in the cemetery there has been little attempt to propagate this genus which appears to do quite well in the area. Because of scarcity of water there is but one *ahuehuete* (*pentamu* in Tarascan) or bald cypress (*Taxodium mucronatum* Ten.) in Quiroga, in the Plaza Principal at a point where tradition claims there was a watering trough more than a century ago. This *ahuehuete* appears to be dying slowly. The Peruvian pepper tree (*Schinus molle* L.), so common in the *bajío* communities to the north, is represented in Quiroga by fewer than a dozen scattered individuals, chiefly in the arroyos and on the outskirts of town.

Highly important in the landscape in the northern half of town, and along the fences and field boundaries in all of the outskirts, are agaves, cactuses, yuccas, *colorines*, and *chupires*. *Magueyes* or *acambas* (*Agave* spp.) are used to mark the *solar* and *sementera* boundaries, as is common over much of southern Mexico, and also are raised for drink, food, and fiber. There are no solid plantings of the agave, but some 200 punctuate the landscape in Quiroga. Besides the many small species of ornamental cactuses which are raised in *macetas*, there are perhaps a hundred clumps of *nopales* (*Opuntia ficus-indica* (L.) Miller and closely related species) in the yards, along the arroyos, and along the margins of the *sementeras*. On the top of adobe and of masonry walls, and even in trees, are a number of the *pitahayo* or *tuna tasajo* cactus (*Hylocereus undatus* (Haw.) Britt. & Rose) which both repels unwanted visitors and provides a most delicious fruit. Unlike so many Mexican towns, there are practically no (less than six) *órgano* or *cardón* cactuses, but the few are used in traditional fashion in fences. Serving as landmarks and as a popular source for place names are some 80 giant yuccas (*Yucca decipiens* Trel.), which are known locally as *palmas*, *izotes*, and *zambas*. Popular for their scarlet flowers and beans are the *colorines* or *purenchequas* (*Erythrina flabelliformis* Kearney) which must number at least one hundred within the precincts of town. The *chupires* (*Euphorbia calyculata* H. B. K.) have been cultivated by the Tarascans since prehistoric times, and are locally famed for their blistering juice or latex and for medicinal qualities. Perhaps it is not mere accident that the bulk of the *chupires* are found along the roads and fields of the Indian part of Quiroga. To complete the verdant picture are the castor-bean shrubs (*Ricinus communis* L.), both wild along the arroyos and cultivated for seeds and ornament, tree tobacco (*Nicotiana glauca* Graham), willows (*Salix* spp.), canes (*Arundo* sp.), and *castillos* (*Leonotis nepetaefolia* R. Br.) which abound along the arroyos of town, and the many species of grasses, composites, mints, solanums, etc., which grow wherever soil and some moisture are available—in the streets, by the houses, along the arroyos, etc. Added to all this vegetation are the cultivated fields (chiefly maize, some wheat, a little alfalfa) which completely

surround the town and extend inward in scattered lots to within two blocks of the center of town.

The appearance of the streets in the central part of town is clean and neat. The *ayuntamiento* hires a man who goes around with a mule-drawn two-wheeled cart and cleans up and hauls away the trash from these streets. On all the main streets and on a majority of the other streets the houses are built flush with the street or with the narrow sidewalk. There are no open spaces or yards in front of houses excepting in the peripheral suburban areas where the house may be built a rod or two back from the street, but this is decidedly the exception. In the majority of the occupied blocks the houses form an unbroken wall or front around the entire circumference. On occasion it is difficult to distinguish the individual houses, but a number of criteria usually allow the determination of ownership, construction, or dwelling units. Roof pitch, height of exterior front wall, and material are unreliable criteria; however, at one time or another most of the houses have been whitewashed, and the units can be determined from the age or weathering and general condition, the shade or hue, and the decorative lines or designs. Of the 725 structures in Quiroga, 566 have been whitewashed with a lime mixture, 20 have a brownish mud-plastered surface, 8 have a cement stucco or an oil-paint surface, and 131 houses either never have been whitewashed or have lost all traces of any surfacing. Commonly the front wall will have one or more horizontal lines (usually in blue or red) which extend the full frontage of the house (excepting on the door or doors) at a height of between 2 and 5 feet above the street or sidewalk. These lines or bands serve to break the monotony of the white front, and also they commonly set off the lower mud-splattered zone from the higher and whiter zone. Practically never will two adjoining houses coincide in the height, color, design and spacing of the decorative lines. Quite often, on careful inspection, it is possible to note the position of the joining crack between two houses even though it be covered with whitewash or plaster.

Although there are only four signposts in Quiroga (at the three highway entrances and at the central intersection), and no billboards, a considerable number of paper posters have been affixed to the walls (especially in the central 16 blocks). These are commonly massed at the corners and constitute an illegal disfigurement since there are scattered statements lettered on the walls warning people not to post signs or advertisements (*"No anunciar,"* etc.). The greatest variety of such advertisements is to be found in the signs proclaiming the virtues of various patent medicines, especially those presumably good for colds and headaches. In this group a rough count gave 89 Mejoral, 20 Pildoras Ross, 20 Roberina, 16 Cafiaspirina, and about 12 more representing five other tonics. In second place were the cigarette signs, all but four of which advertised Cumbres (60 posters). In addition there were 11 Coca-Cola posters, 2 of Carta Blanca beer, and 1 of Chiclines chewing gum. There were no signs advertising automobiles or tires, refrigerators, or any other kind of "hard" goods or expensive items. On occasion an ephemeral poster would appear advertising a circus, bullfight, or football (soccer) game in some neighboring town such as Morelia, Pátzcuaro, or Zacapu. Many of the houses also carried small printed posters on the door which stated that *"Este hogar es CATOLICO; repudiamos la propaganda PROTESTANTE"* (This is a Catholic home; we repudiate the Protestant propaganda). The only other signs commonly found on the building walls were the occasional *cuartel-manzana-calle* signs mentioned previously and house numbers. More than a third (262) of the houses had no numbers. Nearly every house had one or more sets of crossed sticks or slats above the doorway, which had been placed there on some festive occasion to hold colored paper streamers or other decorations in place. A number of houses in the outskirts (probably not more than 20) have two muleshoes nailed above the doorway with the calks or ends pointed upward in the traditional form to insure good luck and fertility. Nearly all recently erected houses, as well as many of the others, have 2 or 3 wooden crosses erected along the roof ridge or main axis (1 at each end, and the third in the middle). The crosses invoke a blessing on the new house, and are also considered by some individuals to be effective in keeping *rayos* or thunderbolts from hitting the house. Most of the places of business (shoe-repair shops, grocery stores, yardgoods stores, etc.) occupy one or two front rooms of the same house in which the proprietor and his family live. At one time all of the larger business places, as well as many

of the smaller, had a distinctive name painted in large colored letters somewhere on the front—usually just above the door. This name never was connected with the name of the owner, and seldom was indicative of the nature of the business. At present there are still visible such names as Salón Tere, El Horizonte, La Luz, El Nuevo Paris, Unión Pacífico, La Esmeralda, El Page, La Barata, El Porvenir, and Buenavista. These names represent the more or less modern equivalent (for a presumably literate public) of the colonial and early nineteenth century carved or painted emblems which could be understood by an illiterate people. Some of the defunct street names carry the memory of the older store names; e. g., the Calle de la Campana (present Manuel Doblado) got its name from a large bell which was painted on a store at the corner of Doblado and Ramón Corona more than a century ago. A few stores and the hotels and restaurants have modern names painted above the doorway or on a swinging board sign. These include the various tourist or "regional curiosities" shops, the Botica Vasco de Quiroga (a drug store), the hotel and restaurant Atzimba, the Hotel Central, and the Posada Escobedo.

Since there is practically no local vehicular traffic, and busses and automobiles from the outside do not pass more frequently than about five or six an hour, the bulk of pedestrian as well as animal traffic moves on the streets rather than on the sidewalks. However, the beasts of burden (principally burros, some mules, and a few horses) when going around a corner tend to conserve steps by cutting the corner as closely as possible. Since most of the packing by animals is from and to the north (busses and trucks are available in the other directions) there has been considerable attrition of the whitewash and of the adobe walls on the corners in the two northern *cuarteles*. It is only in those districts of town that stone corners (stone used instead of adobes in the corner portions of houses) and stone guards (*guarda esquinas*) are to be found. The typical *guarda esquina* is an elongated slab of stone, inserted in the ground about 1 foot out from the corner, which stands 4 to 5 feet above the street surface and absorbs the abrasive contact with fagots, sacks of charcoal and maize, building stones, bricks, adobes, tiles, etc. The streets are fairly open since only a few contain trees (planted along the sidewalks), and the public utilities are few. There are only about 100 poles which carry electric wires from two transformers (one at the intersection of Arteaga and Lerdo de Tejada, and the other at the intersection of the Plazuela de Bravo and Degollado). Electricity reaches 44 of the 89 occupied "blocks" in Quiroga, and is utilized by 281 families and businesses in 239 houses. There are a total of 927 bulbs or "lamps" in Quiroga, of which 77 provide the illumination for the town. When street lighting began in Quiroga we do not know. There were *faroles* or lantern posts already erected on some of the principal streets and in some of the plazas when municipal records begin in the 1860's. By the 1880's there were 26 *faroles*, and the number had increased to 62 in 1899. Conversion from liquid fuel to electricity, provided by a wood-steam plant containing two direct-current dynamos, was made in 1906. At present the electricity (since September of 1942) comes from the Bartolinas plant of the Comisión Nacional de Electricidad near Tacámbaro. The only other impediments in the streets are some 30 telephone poles, which are restricted to the southern part of town. In 1878 the telegraph line reached Quiroga from Pátzcuaro; in 1893 conversion was made to telephone; and in 1899 the line was continued out Carreras and northwestward to Coeneo. There are only the State telephone office in the municipal building and one private telephone.

WATER SUPPLY AND PLAZAS

Two springs well up on the margins of the Arroyo de Quiroga (Arroyo de Cutzaro, etc.) some 1,500 meters north of the center of town. Two small concrete and stone houses (*cajas*) have been built over these springs, and the water is conveyed from them by a conduit of terra-cotta pipes or tubes which were laid in a shallow trench and covered with earth. This conduit or *cañería* runs along the west side of the arroyo to a brick diversion tank known as La Alcantarilla del Aguacate because of its location on the street of that name. From this *alcantarilla* metal piping laid on the surface carries water southwest to the cement water-basin or font (*pila*) in the center of the Plaza de la Constitución. The main water line continues in an underground terra-cotta *cañería* from La Alcantarilla del Aguacate eastward, is carried across the arroyo by an arch (which has

given its name to the nearby Calle del Arco), and continues diagonally southeastward to the brick *alcantarilla* in the Plazuela de Valle. From this tank metal pipes go southward in two lines: (*a*) By way of the *pila* in the Plazuela de Valle and the watering trough in Abasolo to the *pila* in the Plazuela de Bravo, and (*b*) down Ramón Corona to the *pila* in the Plaza Principal and on via the Calle Nacional to *pilas* in the Plaza de los Mártires and the Plazuela de Mina. The above-mentioned six *pilas* constitute all of the municipally provided sources of free water in town. Formerly there was a *pila* in front of the chapel of San Vicente, but the piping was taken out in 1928, and the fountain was removed in the 1930's when Benito Juárez was widened and paved. There are a few subsidiary pipe lines, some underground and some running on the surface of the streets and sidewalks, which carry water to a few homes and places of business. In 1945 only 65 buildings (of the 725 in Quiroga) had piped water, and 43 of these were in the two western *cuarteles*. The two districts or *barrios* known as El Calvario (north of Doblado, Valle, Cuerno, and Olivo) and El Pueblo Nuevo (east of Guerrero and Pueblita) have no piped water and no *pilas*. The bulk of the water for domestic use is carried by women and girls in *ollas* or water jars (carried both on the head and on the shoulder) from the nearest *pila* to their homes. Those who can afford it employ water-carriers or *aguadores* who carry 10 gallons of water from *pila* to house for 10 cents Mexican (10 *centavos*). These *aguadores* attach two 5-gallon kerosene cans or *latas* by cord or wire to the ends of a short pole which is balanced across one or both shoulders. The whole arrangement is known as a *maroma*. In recent years (due to deforestation, denudation, erosion, and accelerated run-off) the springs in the *cajas de agua* have not been able to supply the needs of Quiroga during the dry season. In 1945 the Pila de Mina dried up March 27; and by the 4th of April the Pila de los Mártires and the Pila de Bravo were dry, and the other *pilas* were low. In addition to the absolute lessening of water supply through increased run-off at the time of the rains, part of the difficulty in the town's water supply has been occasioned by the use of old tubes and pipes which lose a great deal of water through cracks and by percolation. The present *cañería* and *tubería* date from a renovation in 1878–84 and partial replacement in 1923. The *ayuntamiento* in 1946 acquired some concrete piping and was attempting to obtain sufficient State and Federal assistance so that a complete new water system could be installed, including *pilas* or outlets for El Calvario and El Pueblo Nuevo. Besides the piped water and fountains, there are some other supplementary sources of water. There are 46 wells, varying in depth from 5 to 10 meters, which supply water to the families owning the wells (which are in the back yards). However, most of these wells run dry toward the end of the dry season (usually in April and May); a number of them have but a small supply of water at best; and the majority have polluted water which is used only for watering plants and laundering clothes. Most of the wells (34) are in the two lower *cuarteles* in the vicinity of the arroyos; three wells are on the southern margin of El Calvario; and four wells are in El Pueblo Nuevo. Most of the animals are watered at the trough on Abasolo, and practically no use is now made of the horse bath or Baño de los Caballos which is a circular brick and masonry basin 2 meters deep and 14 meters in diameter located just west of the Plaza de la Constitución and fed by several small springs. The slaughterhouse, some irrigated gardens and orchards, a public bathhouse, and several tanneries and tile and brick factories located in the western portion of town obtain their water by pipes from the spring of Atzitzíndaro and from the run-off of the several small springs that are in that area. The spring of Petatario northwest of El Calvario is used by some of the residents of the northern part of El Calvario, and the spring of La Tepóricua is utilized by the people in the northeastern part of El Pueblo Nuevo. Most of the laundering of clothes is carried on at the various springs, and at several of the more permanent pools in the Arroyo de Quiroga and the Arroyo del Cerro Azul.

When the various plazas, *plazuelas*, and *pilas* were first established is not known. We have already discussed some conjectures concerning the main plazas. It is claimed that the two *alcantarillas* and a former *pileta* in the Plaza Principal near the sole bald cypress constituted the main elements of the town's water system a century ago. In 1857–58 the modern system was inaugurated, and on January 1, 1858, the *pila* and the 50-foot column with the statue of "America" in the Plaza Principal were dedicated. Between 1861

and 1862 the *portales* on three sides of this plaza were erected. These *portales* or arcades contain 41 arches and 11 main pillars of quarried stone from Tzirate; are floored with brick and tile; and have a tile roof over a ceiling supported by massive pine rafters or *vigas* which were renewed about 50 years ago. The shape of the Plaza Principal is that of a wedgelike quadrangle, 72 meters long from the Portal Allende south to the Calle Zaragoza, and tapering from 45 to 32 meters between the *portales* Hidalgo (on the west) and Matamoros (on the east). A narrow cobblestoned street flanked by a cement sidewalk encloses the central garden on three sides. Nineteen cement benches or *lunetas* (carrying the names of the donors—leading citizens and merchants, and dates between 1939 and 1943) and seven iron and wood seats are arranged along the inside of the sidewalk. Lateral and diagonal walks converge on the central area occupied by the statue of America, the cement fountain, and an elevated and covered *kiosko* or bandstand. This stand was erected in 1934 to replace an older one of 1894. Ash trees border the plaza, and in the parterres of the garden are a number of ornamental palms, banana plants, jacarandas, etc. About 1934 the garden within the Plaza Principal was named Jardín Belisario Domínguez, but scarcely anyone in town knows or uses this name. The Plaza de la Constitución (Plaza Vieja) is located on the north side of the Calle Zaragoza in the western portion of town. Occupied blocks are on the west and east, and ruins of adobe buildings are at the north side. The plaza is surrounded by a dirt street on three sides, and in the center is the *pila de agua*—a simple cement basin 9 meters in diameter. Numerous ash, cypress, willow, and poplar trees are along the Zaragoza frontage and irregularly distributed over the plaza proper, whose surface is of the natural earth. In the eastern portion there is an earthen basketball court. At present this plaza serves no special function. The Plaza de los Mártires, constructed in the 1860's on the site of the former municipal buildings just west of the parish church and *curato*, contains one *pila* and the only remnants of the metal *faroles* or lantern posts left in Quiroga. This plaza was paved with cobblestone in 1890–92 to improve it for use as a market place, which is its present function. Ash and privet trees provide shade and decoration and, at the northwest corner adjoining the Calle Nacional, are a number of semipermanent kitchen stalls and general sales booths. The dimensions are about 65 meters north and south by 50 meters east and west. The Plazuela de Nicolás Bravo (earlier Degollado, and before that *de los Naranjos* from some orange trees which were torn out in the 1870's) occupies the small irregular space at the northwest corner of the Concepción Church, where Rayón, Aldama, Jiménez, and Degollado streets converge. There is a central small *pila de agua* (constructed in 1879) and a few jacaranda and privet trees. The Plazuela de Mina (*de los Negros*, and *de los Tecolotes*) is situated in the triangle where La Parroquia street intercepts the Calle Nacional, and Jazmín and Carreras enter from the sides. There are a number of ash trees and a *pila* built in 1867. The Plazuela de Valle occupies the area where Ramón Corona and Abasolo converge, and El Cuerno and Manuel Doblado enter from the west and east. Here is the master *alcantarilla* and by it a *pila de agua* and several jacaranda trees.

BRIDGES

There are 20 bridges and culverts in town, of which only 6 are formal bridge structures which are apparent as one traverses the streets of Quiroga. These structures are arranged in three lines or zones: (*a*) over the Arroyo del Cerro Azul and its tributaries in the eastern portion of town; (*b*) over the central Arroyo de Quiroga; and (*c*) over the drainage lines that descend from the northwest across the Plaza de la Constitución and near the spring of Atzitzíndaro. In age the bridges and culverts vary from such as the old single arch masonry bridge by the Abasto Viejo (which may be more than a century old) to the modern steel and concrete bridges built in the 1920's and 1930's by the Government along the route of the main highway. Many of the small bridges and culverts are little more than some logs or a few large stone slabs placed across the stream courses on the minor streets. The most interesting bridge is one of masonry and planking on the western tributary of the Arroyo del Cerro Azul where it flows across Guerrero, under a corner house, and across Morelos. There was no surface indication of this bridge excepting in the removable planks in the inside corridor of the corner house.

HOUSES AND SOLARES

In 1945 there were 725 buildings in Quiroga, of which 632 were inhabited, 10 were under construction, 43 were temporarily uninhabited or were abandoned, and the remainder were utilized as stores, workshops, storage places or warehouses, schools, churches, etc. The distribution by *cuarteles* was I—187, II—192, III—195, and IV—151. In the central *manzanas* the houses were built so that there was a continuous wall of varying height completely inclosing the block. Because of the great variability in shape and dimensions of the blocks any statement of average size or dimensions of blocks and of homesteads or *solares* would be misleading. We measured the frontage of every house and *solar* in Quiroga, and the most significant resultant fact was that houses and *solares* varied from as little as 4 meters in width to more than 50 meters. The majority of the house plots and houses ranged in width between 9 and 16 meters. Because of the lack of visibility and because we entered the interiors of the *solares* only when invited to do so (which was only in about 1 of every 12 houses), we have only a few measurements and estimates of the depth of the *solares* and lengths of the houses. It would appear that there has been some retention of the colonial depth or length of a *solar* (50 *varas* or 41.9 meters), but that the frontage has commonly been divided into about four parts. Perhaps the typical house plot is 10 or 12 meters in width by 40 to 42 meters in depth. It is obvious that in a completely occupied rectangular block the *solares* at and near the corners have been developed at each other's expense, while the *solares* toward the center of each side can extend approximately to the center of the *manzana*. The normal occupation arrangement on a *solar* is the house occupying all of the front portion (between one-quarter and one-third of the length), and the remainder constituting a backyard with fruit trees and ornamental plants, privy, poultry shed, etc. Only about one-seventh of the houses, usually in peripheral position, had contiguous seed plots or *sementeras*. About one in every four *solares* (187) had a livestock corral, which was commonly a fenced-off portion of the backyard. The most common fencing material, within and at the sides of the *solares*, was adobe bricks built into walls averaging about 7 or 8 feet in height. Toward the peripheries of town, walls of stone and fences of barbed wire punctuated with *magueyes*, *colorines*, *chupires* and cactuses predominated. Privies of some type were present in 389 houses, and 336 had none of any description. The predominant type of privy or *excusado* was the simple one- or two-hole backhouse over a trench or pit, and only 12 were water-flushing toilets known as *moderno* (modern) or *estilo inglés* (English style).

Although a few of the buildings are of 2 stories (33 buildings including 2 hotels and the municipal building), the great majority (692) are of but 1 story. However, this represents quite an advance over 1884 when there were but 4 buildings in Quiroga with 2 stories. Twelve of these larger buildings are in *cuartel* I and the remainder are fairly evenly distributed through the rest of the *cuarteles*, but the actual concentration is in the 9 central *manzanas*. Sun-dried adobe bricks are the basic material of the house walls in all but 37 buildings (675 of adobes, 7 of adobe and stone, 5 of adobe and brick, 1 of adobe and straw, 1 of wood, and 36 of brick). The one wooden building is a modern plank shanty to house a highway employee on the margin of town. There are no Sierra Tarascan type wooden *trojes* except 3 or 4 small structures in back yards used as granaries. Practically all of the brick structures are along Benito Juárez and Zaragoza, and most of them are on the south side of these streets and represent the structures erected by the Government in recompense for the buildings destroyed in widening these streets for the highway. Adobe houses are popular because of their cheapness, durability, and good insulation qualities. Most of the houses are built of adobes made from the soil in the same *solar* in which each house was erected. This soil has about the proper proportions of clay and sand, and all that is necessary to add is some chopped straw or dried equine manure, and water. After proper mixing the adobe mud is shaped by packing into a wooden frame, then the adobes are dried in the sun for several weeks, after which they are stacked and allowed to season for a variable period of time. A shallow trench is dug where the walls are to be erected, and in this trench is built a masonry foundation which commonly extends about 6 inches above the ground level so as to keep the surface waters of the rainy season from contact with the adobe wall. Upon this foundation the adobe bricks are laid in staggered courses

(much as are brick walls in the United States) with adobe mud used instead of a calcareous mortar. There is a slight range in the dimensions of the adobes most commonly used, but the average size is 48 by 28 by 10 cm. (19 by 11 by 4 inches). The walls of older houses have adobes of about the same width and thickness but the length is about 56 cm. As mentioned previously, a majority of the houses have a protective coating of calcareous whitewash or mud plaster. Most of the buildings (541) have a 2-shed or gable roof (*techado de dos aguas*), although 153 houses have shed roofs, and 31 houses have a combination of 1 and 2 sheds. There are no flat roofs or *azoteas* because of the considerable rains in the summer. A framework or *armadura* of pine plates, posts, rafters, purlins, and ridgepole or *caballete* is tied in to the top of the walls, and upon this *armadura* is placed the roofing material. Practically all (711) of the houses are roofed with red tiles, and only 9 have roofs of *tejamanil* or shakes, and 5 roofs are of *zacate* or grass thatch. Up to the 1860's all of the roofs were of *tejamanil*. Probably a combination of increasing scarcity of timber, the need to reduce the fire hazard, and a desire to eliminate one of the hallmarks of Indian identity caused the drastic change from shake to tile which was nearly complete by the 1880's. The tiles used are the small 47-cm. curved tiles made locally in the *tejerías* on the northwestern outskirts of town. These are laid vertically with alternating concave and convex upper surfaces which overlap or interlock along a horizontal row which begins at the bottom of the roof. The next row up is laid in a similar fashion but projects somewhat over the lower row. This process is continued until the ridgepole is reached from both sides, and then the projecting tops are covered by tiles laid horizontally. As there are no fireplaces with chimneys or stoves with smokestacks, there is no need to provide exits for those items. Ceilings are present in a number of the houses, but they are definitely in the minority. This ceiling and the space above it commonly constitute a *tapanco* or attic or half story which is used for storage of maize and other items.

About half (350) of the buildings have 1 or more windows that give onto the street. These windows are commonly small and are closed by a single wooden panel. Only 50 of the houses have glass windows, and the majority of these are protected by either iron or wooden grates or grills (*rejas*). Some 10 or a dozen of the houses have small balconies. The number of exterior windows per building ranges from only 1 (206 houses), through 2 (85 houses), 3 (29 houses), and so on up to 1 house with 17 windows. The majority of the buildings (467) have but 1 door that gives onto the street. There were 2 doors in 117 houses, 3 doors in 71 houses, and so on to 1 house that had 16 exterior doors. The doorways commonly have jambs and lintels of wood and sills or thresholds of stone or brick flush with the floor surface. A few of the houses have doorways and windows with stone jambs and lintels. All the doors are of wood, and commonly they consist of several loosely fitted planks held together by cross pieces nailed on the inside. However, the houses in the downtown or central section have carpentered and fitted doors which in a few instances are handsomely carved. Most of the doors are held in place by metal hinges, although a few have leather hinges. There are no doorbells of any description, but about 120 houses have simple ring knockers of iron or brass, and perhaps 8 or 10 have knob knockers of metal fashioned like paws, fists and simple clappers. Usually the front door opens into a room, but in perhaps 50 or 60 houses the 1 front door, or the central door if there are several, opens onto a *zaguán* or hall which goes through to the patio. Several of these *zaguanes* are paved with mosaic or colored glazed tiles. The majority of the doors have a metal lock which is operated with a very large key. In the poorer homes the door is closed from the outside by a cord or thong which is tied through the door and looped over a nail or peg projecting from the jamb. Practically all doors, including those with locks, are barred or double-barred on the inside when it is time to retire or when visitors are not desired. There are some 18 or 20 houses, all in the suburbs or peripheral areas, which are set back a way from the street and which are approached through a covered gateway known as a *portón*. These *portones*, which usually consist of an ordinary swinging gate of poles and withes or thongs, flanked by two posts which are surmounted by a small roof of tile or shake, are more common in Michoacán and Guerrero than in any other portion of Mexico although their use is increasing throughout the Republic. The function of the roof probably is to provide shelter

from sun or rain while the visitor is waiting for the gate to be opened or his call to be answered. Most of the houses (435) have complete or partial sidewalks of cobblestones; 111 houses have no sidewalk of any description; 89 have asphalt; 61 have cement; 26 have brick; and 3 houses have sidewalks of glazed tiles. From the above we get the picture of a typical Quiroga house as of 1 story, with a 2-slope roof of red tiles, cobblestone sidewalk, whitewashed adobe walls, 1 exterior door, possibly 1 or more windows, and no public utilities.

There are 5 arrangements of rooms which comprise more than nine-tenths of the houses in Quiroga. Our conclusions are based on data from all of the inhabited houses and several of the others totaling 650 buildings. The distribution of houses by number of rooms was: 224 with 2 rooms, 186 with 3 rooms, 74 with 4 rooms, 56 with 1 room, 50 with 5 rooms, 23 with 6 rooms, and 37 with 7 up to 30 rooms (this includes the municipal building and the hotels). This would indicate that the typical house has 2 or 3 rooms. This conclusion is not quite correct from the American point of view. In the United States we include living room, dining room, bedrooms, and kitchen (although not bathrooms) among the rooms of a house. In Quiroga there are practically no bathrooms or water closets (or closets of any other description) so such rooms do not enter the picture; but, in Quiroga, a kitchen is never considered to be a *pieza* or room. Usually the kitchen or *cocina* is a separate unit in the patio or at the back of the house, and consists of a shed roof (extending out from the back wall of the house or the side wall of the *solar*) and inclosed on two or three sides by walls of adobe, mud and wattle, matting or thatching, etc. Therefore, if a house is said to consist of two rooms this means that there are two completely roofed and inclosed units plus a kitchen and possibly other structures in the back yard, among which may be a granary or *troje* (in the original Spanish sense of the word). The most common house arrangement is of two rooms (both with a wall on the street if the *solar* is wide enough, otherwise with one room fronting the street and the other room giving onto the back yard or patio), with an open porch or shed at the back, in one corner of which is the kitchen. A nearly as common pattern merely adds a third room on one or the other side at the back to form an L-shaped house. In another arrangement a fourth room is at the back, giving a U-shape to the house, in which case the kitchen leanto is commonly attached to the wall of one of the side rooms and the yard is effectively divided into an inner nearly inclosed patio which contains the flowers and ornamental shrubs and an outer yard which contains the outhouses and fruit trees. The one-room pattern normally has the kitchen occupying all of the back porch or veranda. Finally, there is the arrangement of five or more rooms which completely inclose a patio, in which case usually a *zaguán* leads directly from the street to the patio. This is the type that most closely approximates the Moorish Spanish house, and in a number of such houses there is a central well or font in the patio and a formal arrangement of ornamental shrubs and flowering plants in *macetas*. In approximately 400 of the houses the chief or only flooring material is brick; tamped earth constitutes the floors in about 290 of the houses; about 30 have cement floors; and only 5 have wooden floors. In perhaps 60 of the houses in which brick or cement floors predominate there are 1 or more rooms or parts of rooms with flooring of another material (brick and cement, brick and wood, cement and wood, brick and tile, etc.).

The function of the rooms depends upon the number of rooms present and on the size of the family. In the occupied houses or homes there is an average of more than 1.5 persons per room. If there is only 1 room it serves as combined living room, storage room, and bedroom. The most common arrangement (in houses with 2 or more rooms) is to use the front or "best" room as a parlor in which to receive people, as the location for the household shrine and any lithochromes and photographs the family may possess, and as a storeroom in which to keep the wooden chests which contain the best clothing and other treasured possessions. If there is a sewing machine or radio in the house it is usually kept in this room. In Quiroga in 1945 there were 194 sewing machines (100 pedal and 94 hand), 62 radios, 9 phonographs, and 4 pianos. Also, should guests stay overnight commonly they will be bunked down (on mat, cot, or possibly a wooden bed) in this room. The other room or rooms serve as bedrooms and (in the case of some handicrafts) as workrooms. Should the size of the family require it 1 or more persons may sleep on the back porch or in the kitchen. We did not take a census of household

furniture, but the 1940 census indicates that about 20 percent of the population sleep on mats (*petates*) laid on the floor, 74 percent sleep on beds (principally wooden frame beds with slats and no springs), and the remainder sleep on crude canvas cots or on planks or slats placed across wooden horses (this arrangement is called a *tapexco*). Usually there is no separate dining room or *comedor*, and the people eat in the kitchen or at a table on the back porch or veranda. The most important fixture in the kitchen is the hearth or fireplace (*chimenea*), which usually consists of a solid platform of stone and mud (this is of cement or of brick in a minority of the houses), and an elevated back of the same material, upon which are placed the three hearthstones (*paranguas*) in the shape of a U. Quite often these three stones are plastered over with mud. The fire is built within the *parangua;* tortillas are cooked on a terra-cotta or metal sheet (*comal* or *erox*) which is placed directly above the fire; and the various cooking pots and kettles of terra cotta, copper, and aluminum are arranged at the edges. Other than this type of cooking equipment, there are perhaps 8 or 10 oil stoves and 4 or 5 wood stoves in Quiroga. Most of the homes use only cut sticks (*leña*) of oak and pine for cooking, supplemented by corncobs, twigs, refuse from the elaboration of wooden chairs and bowls, dried cow dung, etc. Other fuel used included charcoal in 60 homes, charcoal or wood in 53, and *tractolina* (crude distillate of petroleum) in 8 homes. Only the wealthier families in the center of town have stoves or use charcoal. As mentioned previously, 239 buildings have electricity, which is used in the homes only for illumination and the occasional radio (there are 2 or 3 electric irons); 389 homes use *petroleo* (kerosene); and the remainder use either candles or pitch-pine splinters (*ocote*) for illumination.

The present settlement pattern and the house types in Quiroga town apparently have little in common with their Tarascan predecessors. Although the pre-Conquest Tarascans lived in agglomerated settlements, it is certain that the organization in more or less regularly laid out streets and blocks was due to the Spaniards. Concerning the house styles and materials the evidence is not so clear. Our only evidence from the pre-Conquest period is provided by a few archeologic fragments, and by the illustrations and some casual comments in the Relación de Michoacán. In an arroyo near the Yácata del Lindero northwest of Quiroga some archeologic material has weathered out which includes lumps of cooked earth which retain the casts and markings of wooden poles and grasses. These could indicate either thatched roofs or walls of wattle and mud. However, the accumulated mounds of large clods of cooked earth and stones of various shapes near the *yácata* would indicate that the walls were of mud (unshaped adobe) strengthened with stones, and probably the roofs were of thatch or wattle and mud. The illustrations in the Relación de Michoacán show houses of a rectangular outline that seem to have roofs of both two and four sheds or slopes. The wall material is indeterminant; while some of the roofs seem to be of grass thatching, others have the appearance of shakes. In the text of the Relación there is mention of wooden houses. The situation at the time of the Conquest was probably that the majority of the houses were of stone and adobe walls with thatched roofs, but that some of the houses were of hewn plank sides and shake or small plank roofs. The accounts of the sixteenth century (Relaciones Geográficas;[1a] Sahagún, 1938; and Ponce, 1872) concerning the Tarascan settlements are practically unanimous that the walls were of adobe and the roofs were of grass, although a few wooden houses are mentioned in the first and last sources listed above. Apparently the shapes, sizes, and materials of the houses continued the same after the Conquest as before, but stones were used primarily in the foundations, the adobe mud was shaped into Old World forms of adobe bricks, and the working of wood was made somewhat easier by the introduction of steel axes and adzes. Before the end of the eighteenth century, in those Tarascan areas that had an abundance of pines, the houses came to be predominantly of wood (shake-covered four-shed roofs, plank sides, and wooden floors) of the style known at present as the Tarascan Sierra *troje*. Although we believe that this style of house dates back to special houses used by the priests in pre-Conquest times (on the basis of textual material in the Relación de Michoacán), it is believed by some to have been introduced in colonial times by Mexican and Spanish missionaries upon their return from so-

[1a] See Bibliography, Manuscript materials, Mexico City, Museo Nacional de Antropología ,Fondo Francisco del Paso y Troncosa.

journs in Japan. At any rate, some or most of Quiroga's houses were of this type at the close of the colonial period. After the village was burned to the ground in 1811 it was probably too great a task to cut and hew all of the timber necessary to rebuild the houses entirely of wood, so the walls were made of adobes and only the roofs were of shakes—as reported by Romero (1860–63). The present two-shed tile-roofed houses with adobe walls and floors of brick are definitely European. However, those houses which consist of three units (a combined livingroom-bedroom, a kitchen, and a storeroom) are functionally as Tarascan as they are Spanish. The furniture of the houses and the plants and animals in the patios are a mixture of the two cultures, with a majority of the items being of Old World origin. The native sweathouse has been completely eliminated, although the occasional bread oven in the backyard is somewhat reminiscent of its shape; the shape of most of the granaries is quite probably non-Indian; and the animal corrals and *excusados* are definitely Old World.

LAND OWNERSHIP

FEDERAL, STATE, AND MUNICIPAL LANDS

The lands in the municipality of Quiroga belong to the Federal Government, the State Government, the municipal government, the Indian agrarian community, and to individuals. Within the Villa de Quiroga and its ranchos the National Government has theoretical title to the subsoil minerals, to Lake Pátzcuaro and its permanent tributaries (nationalized in 1920), to the churches and chapels and lands which they occupy, to the federalized rural school "La Redención" which occupies the former chapel of San Miguel (the town school, although Federal, is on private rented property), and to the line which brings electricity from Tacámbaro. In actual practice Federal ownership of lands and buildings in Quiroga is insignificant. All Federal employees (such as teachers, doctors, post-office workers, highway workers, etc.) own privately or rent their offices or places of business; e. g., the postmaster owns the building in which the post office is housed. The nature of State claims to land ownership is somewhat uncertain, but apparently the nearest State property is the Balneario de Chupícuaro near Santa Fe. State employees, such as the tax collector, have their offices in buildings which they own privately or rent. The State does own the telephone line. The municipality as a legal entity owns the public roads and bridges, the streets and plazas, the water system from the *cajas de agua* to the *pilas* and including the pipe lines into private homes (theoretically the Arroyo de Quiroga and its waters belong to the Federal Government), the cemetery, the slaughterhouse, the municipal building, the poles and lights of the town lighting system, and a few small scattered pieces of property within Quiroga town which were valued in 1941 (on the State tax rolls) at 765 pesos.

The cemetery or *panteón municipal* was built in 1850 to take the place of the old and crowded cemetery in front of the parish church. It is situated at the very northeast corner of town, by the Arroyo de Cerro Azul and just below the spring of La Tepóricua. The main portion, which is enclosed by a high adobe wall, measures 104 meters along the western side by 93 meters in width. The only entrance is through an ornate gateway at the southwest corner. Within the main precincts are a centrally located chapel built in 1890–92 which is now roofless and in ruins, the majority of the graves, and all of the ornamental trees and shrubs. In 1879 an addition was purchased which occupies the triangular area between the walled cemetery proper and the arroyo to the east. This area has an uncertain number of unmarked graves (it is essentially the "potter's field"), and is overgrown with weeds and brush. The main *panteón* is extremely unkempt, with weeds everywhere, many graves gutted, headstones askew, etc. The oldest date we could locate was 1861, but a number of the dates were illegible, and many of the headstones had been re-used. The most pretentious monument was that over the grave of Colonel Jesús Villanueva (a hero of the Wars of Reform and the French Intervention), but most of the graves were marked by a simple wooden cross.

The present municipal building or Palacio Municipal in the second block of *cuartel* I, just south of La Concepción church, occupies all the area from the 46-meter frontage on the Calle Nacional back to Calle Degollado. The lands upon which it was erected 1884–1904 were a part of *La Guatapera* or hospital which belonged to the Indian community as late as 1869. Some time between 1869 and 1873 the lands of *La Guatapera* were ac-

quired from the Indians by a white merchant, Mariano Lavarrieta, who gave these lands (valued at 245 pesos) in July of 1873 to the *ayuntamiento* to be used as the site for the proposed new municipal buildings. The old buildings had been destroyed in the 1860's and their site was converted into the present market plaza across the street by the parish church. Apparently Lavarrieta had acquired part or all of *La Guatapera* lands by fraud, and a lawsuit between the Indians of the *barrios* of San Bartolo and San Francisco and the *ayuntamiento* lasted until December of 1877. Ultimately the Indians were given some satisfaction, and work on the municipal building began in 1884. Gifts by individuals, the proceeds of fines and of bullfights, work by prisoners, and several State subventions slowly provided the means for erecting the building, which was sufficiently completed by February of 1895 that the *ayuntamiento* could install its offices and archives. For the previous thirty-odd years the *ayuntamiento* had been forced to rent its quarters. The building consisted of massive 2-story adobe walls, tile roof, and some 20 rooms facing in toward a completely inclosed central patio or courtyard. Stone quarried on the slopes of Tzirate was used in the construction of the doorways and the interior stairs (which were completed in 1899), and iron bars and grills were placed over the windows and in front on the balconies. There is evidence that the building was never completely finished, and at present some of the rooms have been allowed to acquire a ruinous state. The municipal building houses the *presidencia* (office of the president and of the secretary) and the jail and quarters of the police on the ground floor; and on the upper floor are the Registro Civil (together with the office of the State telephone line), Tesorería Municipal, and Juzgado Menor. Also, at the back on the ground floor is a corral and some rooms used as dwellings.

The one municipal structure that has not been described is the slaughterhouse or *abasto municipal*. There have been at least four *abastos* in the history of the town, the last of which was constructed in 1925 on the north side of the Calle Zaragoza in the last block of town going west. It consists of a 1-story adobe-walled and tile-roofed building in the shape of an L, with the upper limb of the L being a shed covering a cement floor. Two cement water troughs, 10 large meat hooks, and an adjacent corral complete the inventory of the *abasto*. The previous *abasto* (now known as the *abasto viejo*) was located at the southeast corner of town, just west of the Arroyo del Cerro Azul and the bridge on the road to Zirandangacho. A flood August 14, 1900, washed this *abasto* away, but it was rebuilt the following year and continued in use until 1925. At present it is a group of roofless adobe ruins which have been partly washed away by the arroyo. Although installed on the church of La Concepción (which is Federal property), the clock tower is municipal. The large four-faced clock was installed June 29, 1895, on top of a tower some 25 meters above the ground level, and at a cost of 3,325 pesos (as compared with the 5,000 pesos total cost of the municipal building).

THE INDIAN COMMUNITY

The present Comunidad Indígena de Quiroga is a lineal descendant of the República de Indios de Cocupao of colonial times. This community, as was true of the other Indian towns in Mexico in colonial times, comprised lands owned by the community as a whole and private lands owned by individual Indians. Throughout the colonial period the communities and the individual Indians were allowed to sell their lands to other Indians, to mestizos, and to whites, under certain conditions. By the nineteenth century such sales had cost Cocupao much of its lands. Communally owned lands and individual contributions provided the money that went into the Cajas de Comunidad (strongboxes which served as the repository of community monies and papers) which were present in every Pueblo de Indios. Out of the monies accumulated in the local *caja* (or *arca*) came the tribute to the crown and the expenses of the local church and hospital. Toward the end of the colonial period the bulk of the community funds were absorbed by religious expenditures. The administration of the *cajas* became so notoriously bad that viceroy Revilla Gigedo in 1773 ordered a general inspection. Although we have seen a number of inspection *informes* for communities in Michoacán, unfortunately we were not able to locate any for Cocupao nor were we able to locate any of the titles and records that theoretically once were in the local *caja*. Therefore we have no record of the landholdings toward the end of the colonial period and during the first decades of independence. In 1810 the Indians ceased to pay tribute to the crown, and in 1813 the viceregal

government commenced a movement for the breaking up of communal lands, excepting the necessary commons or *ejidos*. After independence was achieved the republican government (at least in Michoacán) reinitiated the partitioning of communally held lands, in 1828; however, apparently not much progress was made. In 1856 the so-called Ley Lerdo terminated legally the ownership of lands by religious and civil corporations. This was the real beginning of the almost complete loss of lands by Indian communities since no distinction was made (nor was it possible in many cases) between the lands of the Indian community and the lands of the municipal corporation. The Indian communal lands and the municipal *ejidos* were partitioned among the members of the community, or among the tenants and renters of the lands, and also were sold to individuals from outside the community. Federal and State laws facilitating such allotting or partitioning of communal lands were passed in such years as 1872, 1877, 1883, 1892, and 1902. A Michoacán State law of September 27, 1877, completely extinguished *comunidades de indígenas*. Despite all of these laws the Indian communities of Santa Fe, San Jerónimo, and San Andrés, and Quiroga to a lesser degree, maintained their identities and a certain amount of communally possessed lands until about the turn of the century. Apparently in Quiroga between 1856 and 1872 the Indians did allot most of the communal lands to individuals, and a final *reparto de bienes de la comunidad* was made in 1878. A number of these individual Indians sold their lands to non-Indians, as in the 1871–72 sales of the lands that were converted into the Pueblo Nuevo and the sale of the *guatapera* at about the same time. Such sales left the Indian community and individuals with little land excepting from La Tepóricua and the Barrio del Calvario northeastward into La Tirímicua. It is of interest that in the 1890's, possibly aided by the law of 1892, a non-Indian (Gerónimo Ponce) acquired control of most of La Tirímicua. For all practical purposes the Indian community of Quiroga did not exist after 1902 until the passage of the first agrarian law in 1915 and the adoption of the Federal and State constitutions of 1917.

According to inhabitants of El Calvario the history of the Indian community has been as follows: Formerly the only inhabitants of Quiroga were the ancestors of the present inhabitants of the Barrio del Calvario, who lived in the area around the old cemetery and the hospital (*la guatapera*). However, there finally came a white man to Quiroga, who gave the Indians much hard liquor to drink and who told them that if they needed money he would be glad to lend it to them. Under the influence of liquor, or spurred by economic necessity, many of the Indians obtained loans which were always secured by mortgages on lands. Almost invariably the Indians were unable to pay back the loans, and in this manner the inhabitants of the *guatapera* were dislodged from the lands in the center of town and were forced to move up the hill to what is now the Barrio del Calvario. From great antiquity (the accounts that have been summarized were extremely indefinite as to chronology) the inhabitants of El Calvario have fought with the inhabitants of El Centro (the downtown or central part of Quiroga) because the latter tried to take away the remainder of the lands of the Indians, attempted to rule and to dominate the Indians, and discouraged their attempts to become educated. The parish priest was always in league with the "judge" to subjugate the Indians. In former times the Indians or Comunidad Indígena del Calvario had a representative who was elected for life by the members of the community. The last several (*los últimos representantes*) of these representatives began to sell pieces of land to the whites (*gentes de razón*), and in this fashion the Indians were displaced from their ancestral abodes in the center of town and elsewhere. The position of *representante* disappeared about 1910, with the Madero Revolution. An almost immediate result was that the inhabitants of Sanambo (backed by the people of El Centro in Quiroga) began to claim lands that belonged to the inhabitants of El Calvario. However, the people of El Calvario were able to retain their lands through fighting, and because of the complete unity within the Comunidad Indígena. This unity was never threatened until the coming of *agrarismo* (attempt to make use of the agrarian law of 1915), at which time the town priest divided the inhabitants of El Calvario into two parties by excommunicating those who were known to be *agraristas*. The "atheistic" agrarians and the good Christian members of the *comunidad* almost came to blows, but ultimately the dissension was settled peacefully—principally because of the forbearance of the agrarians who were in the majority.

At present, so they claim, all but five heads of family in El Calvario are active agrarian members of the *ejido*, and these five are not members because the priest has told them that they would be damned forever should they receive lands from the Government. Effectively, the heads of family in El Calvario constitute the Comunidad Indígena and also the *ejidatarios* of the Ejido de Quiroga. The members of the local *ejidal* administrative committee are considered to be the representatives of and spokesmen for the Indian community of the Barrio del Calvario in both internal and external matters—whether political or pertaining to lands. It thus appears that the Ejido de Quiroga and the Comunidad de Indígenas de Quiroga are today one and the same entity.

THE EJIDO DE QUIROGA

In 1915 two men, representing the Barrio del Calvario and the extinct Comunidad de Indígenas de Quiroga, petitioned the Governor of Michoacán (in accordance with the agrarian law of January of that year) for a restitution of lands formerly held or claimed by the Comunidad de Indígenas de Quiroga. These claimed lands were in the possession of individuals in Santa Fe, Tzintzuntzan, Patambicho, Corrales, Atzimbo, and Quiroga, and in many instances had not been in the possession of Cocupao-Quiroga for more than 300 years. At this time (1915–16) it was stated that the community of Quiroga held no community lands. In May of 1918 the petitioners from Quiroga admitted that it was impossible for them to present all the necessary documents to obtain restitution of usurped lands, and they changed their petition for restitution to a request for a grant of new lands (*dotación*). The agrarian committee in Morelia made the change to a request for a *dotación* in January of 1920. Then there was an unexplained lag of 9 years until August of 1929 when a census was taken of the Calvario community which showed only 36 men with rights to a *dotación*. In October of 1929 the engineer representing the National agrarian committee confirmed the results of the census, and projected a tentative *ejidal* grant on lands belonging to the Spanish Berrueco brothers in the Hacienda or Rancho de Sajo, to Sra. Beatriz Palacios Viuda de Ponce in La Tirímicua, and to Sra. Soledad Tovar Viuda de Villanueva that were scattered in Icuácato. In November of 1929 the Governor of Michoacán resolved in favor of an *ejido* of 217.5 hectares taken entirely from the Berrueco lands in Sajo, and provisional possession was given the *ejidatarios* on December 17, 1929. Although a local administrative committee (*Comité Particular Administrativo Agrario del Ejido de la Villa de Quiroga*) was organized in December 1929, apparently there was little activity on or concerning the *ejido* until 1931. In June of 1931 the *ejido* boundaries were surveyed (a poor job); crops were planted, harvested and accounted for to the agrarian administration; a census was taken in April which showed 78 individuals with rights to obtain or participate in a *dotación;* and on October 11, 1931, a presidential resolution confirmed the *ejido*. Definitive possession was granted on April 10, 1932, by which time the *ejido* had been extended to include 606.38 hectares (565.68 from the lands of the Berrueco brothers, and 40.70 from the lands of the widow of Villanueva). Presumably each *ejidatario* (of the 78) had a parcel of 5 hectares of good dry-farming land (*temporal primera*) or 8 hectares of second-class dry-farming land and brush land (*temporal de segunda y monte alto*). A careful survey March 9, 1934 (at which time permanent monuments were placed on the boundaries of the *ejido*), showed that the majority of the *ejido* comprised the nonarable lava flow or Malpais de Icuácato. Presumably the *ejido* contained 16.70 hectares of *temporal de primera*, 216.40 hectares of *temporal de segunda*, and 373.28 hectares of *monte alto*, which works out almost exactly the theoretical proportions of each class of land that should be available per *ejidatario*. The *ejidatarios* of El Calvario estimate that each one does not average more than *20 litros de sembradura de maiz* (a variable acreage because of differences in spacing of the seed and numbers planted, but in no case amounting to more than 2.5 hectares of arable land). Consequently the *ejidatarios* must supplement their agricultural income by making *bateas* (wooden bowls) and doing other types of work that may be available when they are not occupied with their fields. In 1935 the *ejidatarios* requested an extension of lands (*ampliación*) at the expense of some of their large landholding neighbors from El Centro, but these landholders protested that they owned only small properties that were within the maximum limits set by the agrarian code.

This matter dragged along until 1938 when another *ejidal* census was taken (which showed a minimum of 60 individuals with *ejidal* rights), and a presidential resolution was issued in favor of the *ampliación* provided that no innocent or "immune" third parties were injured. The authorized expansion was never carried out because there were no available lands (*por imposibilidad material*). At present the 68 *ejidatarios* farm between 75 and 150 hectares annually in the arable lands of the *ejido*, which are all in Icuácato at distances between 3 and 7 miles by trail from El Calvario.

The history of the local administration of the *ejido* has been quite eventful. The first definite organization was the three-man (president, secretary, and treasurer, and their *suplentes* or alternates) administrative committee which functioned from December 1929 until October 1932. The lands were apportioned in a fashion that was unsatisfactory to many who did not belong to the ruling clique (composed of Leocadio Martínez and various members of the Valdovinos, Peña, Chagolla, Flores, Anita, and other families), and apparently only about 40 out of the 78 *ejidatarios* were able to harvest crops of wheat in June and of maize in December of 1931. On October 4, 1932, a new committee was elected by 53 active *ejidatarios*, which committee functioned until February of 1935. In 1932 the agrarian committee obtained the chapel of San Miguel for a headquarters building, and in October of that year local gangs (recruited from the *peones* or laborers for the large landowners in the area) led by men who had participated in the Cristero Revolution of the 1920's terrorized the *ejido* with the tacit support (so the *ejidatarios* claim) of the incumbent municipal president. In February of 1935 a new committee was elected (now termed *Comisariado Ejidal*) which functioned until January of 1939. This was the period of attempted expansion, of a State-imposed municipal government (1935 to 1937), of agrarian domination of the municipal council (beginning with José Jesús Chagolla who succeeded the assassinated *presidente* in May of 1937), of much fighting between the people of El Centro and of El Calvario, and of several assassinations including Leocadio Martínez in December of 1938. In 1938 the administration was partly reorganized to include a supervisory or vigilante committee (*Consejo de Vigilancia*) which also consisted of a president, a secretary, and a treasurer. The two committees elected in January 1939 (for a 2-year period) ran into much difficulty with numerous complaints of lack of equity among the allotments or parcels of land. Especially obstreperous were seven *ejidatarios* who controlled good land out of all proportion and who refused to obey the administrative committees. In 1939 a cooperative was formed (*Cooperativa Forestal Quiroga*) to work the forest products (wood for *bateas*, charcoal, turpentine, lumber, etc.) in the *montes* of the region which were under the supervision of a forest inspector representing the Federal Government. Conditions quieted down somewhat in 1940, and the history to date has been comparatively quiet and bloodless. At present the administrative committees are elected for 3 years (1941–44, 1944–47, etc.). The administrative group (*Mesa Directiva*) while we were in Quiroga was composed of 12 men elected by the *ejidatarios*, and comprised the 3 members of the *Comisariado Ejidal* and their 3 alternates (President—Pedro Valdovinos and Maximiano Valdovinos; Secretary— J. Carmen Chagolla and Indalecio Chagolla; Treasurer—Martín Flores and Fortino Salmerón), and the 3 members of the *Consejo de Vigilancia* and their 3 alternates (President—Jesús Chagolla and Miguel Valdovinos; Secretary—Felix Flores and Basilio Peña; Treasurer—Rómulo Flores and Pedro Ruiz). The chief function of the *Consejo de Vigilancia* at present is to see that each *ejidatario* farms his parcel in a proper manner.

The title to the *ejidal* lands is vested in the community known as the Ejido de Quiroga. This land is inalienable. The regular State land tax is paid by the community, but apparently only a nominal acreage has been declared for the arable portion of the *ejido*, since the tax rolls carry a listing of only 75.34 hectares (valued at 9,099 pesos) out of the 606.38 hectares in the entire *ejido*. The *ejidal* lands consist of commons (pasture lands and woodlands) and of the parcels which have been allotted to the individual members of the *ejido*. Certificates of allotment are issued to each *ejidatario*, and these individual allotments are registered in the National Agrarian Registry. Theoretically every unmarried male over 16 years of age, every married man regardless of his age, and every woman who is the head and support of a household, is a member of the *ejidal* corporation

and is entitled to a parcel. However, no individual may acquire more than one allotment or parcel, even by marriage or inheritance. Since there is not enough arable land available to make allotments to all who are eligible, allotments are made in conformity with the agrarian code which gives preference according to age, size of family, length of residence, and other factors. The unmarried boys between 16 and 21 and the old single men over 50 are at the bottom of the eligibility list. Practically speaking the certificates of allotment constitute titles, and the parcels can be transmitted from father to son (providing that the son does not already possess an allotment). However, protracted absence from the community, unexcused failure to cultivate the parcel, and a few other reasons are cause for the parcel to revert to the community to be reallotted to the person at the head of the waiting list of eligibles. The *ejidatarios* of Quiroga do not reside on the *ejido*, and a number of them possess private properties—which they may do, providing that the area of the private holding is less that that of the allotment. Six residents in El Calvario own rural property, and 52 own urban property—and most of these owners are also *ejidatarios*.

INDIVIDUAL PRIVATE PROPERTY

The remainder of the property in Quiroga belongs to individuals. By law the church may not own property, and no agricultural landowning corporations are allowed, excepting the *ejidal* community. However, two or more farmers may own jointly a small piece of property which they farm collectively.

LAND REGISTRY AND TAXATION

All of the real estate in Quiroga and its municipal area theoretically (according to the Federal and State constitutions) must be recorded in the local tax office. At the time of initial recording or listing the pertinent papers (*escrituras* or *títulos*) must be presented for inspection. These papers are commonly of four types: (1) a few individuals from Quiroga (none to our knowledge) may have inscribed their lands (after proving a clear title) in the *Gran Registro de la Propiedad* in Mexico City and, if so, would have certified copies of the inscription; (2) a few property owners in Quiroga have registered their titles in the State *Registro Público de la Propiedad* in Morelia, and have certified clear titles; (3) the majority possess *escrituras* (bill-of-sale or transfer of property) executed before the local *juez menor* (at which time a *comprobante* or voucher would be made out by the judge and sent to the tax collector's office) or notarized at some *Juzgado de Notaría Pública* in Morelia or other large city; and (4) a few individuals have titles that were executed during the colonial period. Periodically, during the colonial period and more recently, titles to all properties were inspected and lists or *padrones* of properties and taxpayers were compiled for the guidance of the tax collectors. In Michoacán titles were vindicated and registered in 1843, 1867–71, and in 1915. There are still a few Quiroga titles that are in the pre-1915 status, and many pieces of property that have been acquired since 1915 by purchase or long undisputed occupation have not been declared. Each year there appear on the tax rolls several pieces of property with the notation "not listed previously" or "unknown to the treasury" (*ignorado del fisco*).

All taxes on real estate are collected in the State tax collector's office (*receptoría de rentas*) in Quiroga town. The present office is in a private home on Calle Ocampo. The State is divided into a number of tax districts, one of which has its headquarters or *administración* in Pátzcuaro, and Quiroga depends from the Pátzcuaro office. The *receptoría* in Quiroga directly covers all of the present municipality of Quiroga, and *sub-receptorías* in Tzintzuntzan and Teremendo are attached nominally to Quiroga. The Quiroga office consists of one dark unlighted room, several desks, tables, chairs, and bookstands, and the archives. The staff consists of the *receptor* or *recaudador* (tax collector) and two assistants who look up records and make entries in ink. In recent years at least none of the tax collectors has been a native of Quiroga, and their stay is commonly only a few years. The previous tax collector was in Quiroga from 1941 to 1945, and the present tax collector (Don Antonio Castellanos Mendez) took over April 8, 1945. Although the tax office in Quiroga was a going concern in 1843 (and possibly as early as 1824), the archives contain no records earlier than 1907. The records consist of three chronologic groups of large leather-and-board bound volumes. Each group comprises 2 series of separately numbered volumes: 1 for urban properties

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(*Prontuario de Fincas Urbanas*), and the other for rural properties (*Prontuario de Fincas Rústicas*). The oldest group contains 11 volumes for *Fincas Rústicas* (and 2 tomes of indices) which cover the fiscal years 1907–08 to 1915–16, and 11 volumes for *Fincas Urbanas* (and 2 tomes of indices) which cover the fiscal years 1908–09 to 1915–16. The fiscal years are numbered from the end of the French Intervention, and the seventh-eighth fiscal year was 1945–46. From many of the volumes in this group numerous folios are missing, and in other volumes the folios are so torn, crumpled, insect-and-rodent-eaten, and weathered, that the records cannot be deciphered. The second group comprises the two new series (7 tomes of *Urbanas* and 6 tomes of *Rústicas*) which were initiated with the *manifestaciones* of 1915 when most property owners brought their accounts up to date and presented their titles for inspection. In general this group covers the fiscal years 1915–16 to about 1928–32, although a few open accounts were maintained until 1943. In 1926 all the books in the first two groups were checked to help with the starting of the current group of continuation books (*Urbanas* commence with volume No. 8 and run up to No. 16, and *Rústicas* begin with No. 7 and run up to No. 13). At the beginning of each new group and series the numeration of accounts begins with 1 and the seriation or numeration is continued until the group or epoch is finished. Each number stands for one account which occupies two opposing pages. The number of years that any given account may stay under a particular number depends upon how rapidly the space on the two pages is used up by movements of property, payments of taxes, etc. As soon as all the space has been used up the account is transferred to the nearest unused number, which usually is in another volume. A notation of the new number is made at the bottom of the finished account pages, and in the new account pages a notation is made of the old number. In this fashion one can trace any given account back through the different volumes. We made a careful study of only the recent volumes of *Fincas Rústicas*, and we found that by the time we had worked back through volumes 13, 12, 11, and 10 (the numeration actually was in roman figures) we had covered nearly all of the effective and open accounts. There were only nine effective accounts in volume 10. The old numeration of accounts (which carried up to No. 2163 in volume 11) was succeeded in volume 12 by a new numeration which commenced with No. 1 in 1941. This was due to a revaluation or tax assessment board (*Junta Valuadora de Catastro*) which operated from 1940 to 1943. This board, made up of local citizens, circulated a form in 1940. On the basis of the information contained in the forms that were filled out and returned (only a minority of landowners did this) the board revalued lands in 1941–43. There no longer is a board in Quiroga, and the tax collector must make the assessment or appraisal of the value of each property himself. However, in actual practice the tax collector never visits any of the properties, and he merely takes the valuation submitted by the owner—which valuation normally has not changed on the books for the whole period of record which may be a matter of 20, 30, or more years.

The theoretical full account entry contains the name of the owner and his address (if outside of Quiroga); the name and location of each of his pieces of property; the metes and bounds of each piece of property or *predio;* the hectareage, classification, and valuation; the name of the last previous owner and the date of transfer; and the dates, rates, and amounts of taxes paid. In actual practice the current open account contains little more than the name of the owner, the location of the pieces of property, the valuation, and the taxes paid with dates. In order to obtain the full information it is necessary to run back through several volumes, and even then the information practically never is complete. Every field, slope, hill, mesa, plain, and other natural or artificial division of the landscape has its own proper name, and quite often the location of a *predio* will be given in such terms as *Terreno en La Palma* (Land or field in La Palma), *Fracción del Capulín* (a fraction or part of El Capulín), *Sin nombre en Caríngaro* (Without name in Caríngaro), etc. Unfortunately the same field name may occur several times in the different parts of Quiroga; e. g., there are five areas with the name La Palma, and El Fresno occurs in Atzimbo, Caríngaro, and Sanambo. The metes and bounds seldom are given other than at the time of first inscription of the property. Two inscriptions will serve as illustration (translated rather literally):

1916. Property of the Mesa and Top of the Cerro Azul of Pablo Torres Arroyo. On the east (it borders

with Rafael Barriga, Pedro Herrera, and Vicente Torres, wooden fence between; on the west Diego Fuentes Aguilar and Rafael and J. Jesús Rivera, stake fence between; on the north with Efrén and Onésimo Chagolla and with the Comunidad El Calvario, fence between; and on the south with Agustín Ponce and with the borders of the ranchos of Caríngaro and Atzimbo, fence between.

1945. The piece of property here considered is named "Los Conejos," with an estimated area of 10 hectares of hilly pasture land and borders: on the east, with the heirs of Antonio Farías, fence in between; on the west, with heirs of the same Señor Farías, fence between; on the north, the same Farías heirs and J. Encarnación Medina, fence between; and on the south, with the above-mentioned heirs of Farías and Epifanio Rangel, fence and road in between.

There is no general survey system with points of reference on a rectangular grid. Between the adjustment of property lines to conform with natural features such as water divides, stream lines, and lines drawn between two hills or rocks or trees, and the breaking up of properties through purchase and inheritance, there are very few pieces of property that can be bounded by straight lines. Consequently it is difficult to describe boundaries accurately, and to estimate or determine areas. It would seem worth while for the Mexican and State governments to survey and mark a number of base lines and principal meridians, spaced perhaps a hundred kilometers apart, and then (as time and money permitted) to survey townships 10 km. square with monuments every kilometer. This would afford enough of a grid and points of reference so that eventually every piece of property could be described with reference to the rectangular coordinants.

Owing to the difficulty of description and estimation of area very seldom does an inscription contain either the area in hectares or a classification of the lands involved. In the tax rolls from 1907 to 1932 hectareage was not given. Since that date less than one-half of the records indicate the areas involved by *hectáreas, áreas,* and *centiáreas;* a few express area as a fraction of a named field (½ of La Estacada, ⅞ of El Rosario, etc.); and the majority have no expression of area in any form. An inspection of the records revealed that in many instances where the hectareage of a given piece of property had been stated at some time, and later the same *predio* had been sold or surveyed (in connection with the agrarian confiscations of the 1930's or the revaluations of the 1940's), the initial statement of area was commonly less than half the true area. Evidently this was one manner of evading or reducing property taxes. In less than one-tenth of the inscriptions are the types or classes of land given. There are four major classifications of lands, each with several subdivisions. The best lands are those with water for irrigation (*tierra de riego*), or with ample natural moisture (*tierra de humedad* or *de jugo*), and such lands are valued at 400 pesos and upward per hectare. In the second grouping are arable lands that are cultivated by dry-farming and dependence upon the summer rains (*tierra de temporal*). Such lands are divided into three classes locally: good or *primera* valued between $170 and $250, fair or *segunda* valued from $100 to $150, and poor or *tercera* valued between $70 and $80 per hectare. The most common valuations are $100 and $80 per hectare. The third and fourth groupings intergrade and consist of pasture lands (*tierra pastal*), hilly and wooded pasture lands (*pastal cerril*), and lands practically useless from an agricultural point of view which are to be found on the steep and eroded or heavily wooded slopes of hills and mountains (*cerril*) and on the lavaflows (*malpais*). Such lands are valued between $10 and $30 per hectare. The valuation of lands for tax purposes is usually about one-third or one-fourth of the real or sales value. When a sale is made very often the actual cash that changes hands will be several times the declared value on the tax rolls, but the latter figure is commonly the one that appears on the bill-of-sale or *Escritura de Compra-Venta.* Sometimes even this figure is reduced by the secretary of the local court (for a bribe or *mordida,* for friendship, etc.) so that not so many Federal tax stamps (*timbres*) will be required for the *escritura,* as well as to reduce future taxes. On the inscription of account in the tax rolls the total valuation of the properties of each person is always made to terminate in aught (*aumenta para terminar en 0;* e. g., 744 is raised to 750). This total valuation is referred to as the "capital." Up to about 1938 the livestock on property were included as *capital mueble.* After the initial inscription, which may have been many years and volumes earlier, the account may be forwarded with no other information than "Capital" worth so-many pesos, and additions and subtractions by purchase and sale of pieces

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of property are indicated merely by addition or subtraction of the money presumably involved. Considering the underestimations of areas and values the tax rates are not high. In recent years (1940–43) the rate was 12.50 on the thousand, and at present (1944–) the rate is 13.50 pesos for each 1,000 pesos of capital. Despite the fact that the average capital valuation was less than 650 pesos, a great number of accounts were in arrears for a number of years. An indication of this condition is the notification form in use in 1945 which had spaces for the arrears beginning with the year 1935. In addition to the regular land tax, there are collected at the same time a surcharge of 10 percent of the amount of the tax which is earmarked for the State road fund, another 10 percent which goes into the general State treasury, and 5 percent of the amount of the tax which goes to the Federal treasury.

On the basis of the records in the tax office, there are 475 parcels of rural land in Quiroga and its ranchos which are owned by 291 persons, and which are valued at 199,980 pesos. Undoubtedly these figures do not cover all of the lands and landowners in the area, but the amount of omitted land is quite small. The *ejidal* parcels and their owners have not been included in the above figures, although the valuation of the cultivated *ejidal* lands is included in the valuation sum. There are actually a greater number of owners on record since we have considered each account to represent but one owner, although there were 4 groups of heirs, 5 groups of associates, 2 listings for minor sons, 4 simple partnerships, and 21 groups of brothers and sisters. The largest parcel of land was in La Tirímicua, valued at 14,300 pesos, and owned by a man and his wife. There were 10 other persons who owned lands valued at more than 4,000 pesos, and a total of 43 persons owned lands valued at more than 1,500 pesos. More than 50 percent of the rural property in Quiroga (102,010 pesos) is owned by 36 individuals. The chief landowners are Quiroga merchants, the heads of family in the mestizo ranchos (Sanambo, Icuácato, Caríngaro, and Atzimbo), and several absentee landlords (chiefly residents of Morelia and Pátzcuaro). If we accept our 1945 figures of 797 households, 931 families, and a population of 4,159 for Quiroga and its ranchos, the percentages and averages are: About 36 percent of the households and 31 percent of the families own lands, and the total rural valuation of the Quiroga area averages 48 pesos per person. A study of the taxrolls and the family names indicates that certain families (at least individuals having the same surname) own lands out of proportion to their position within the total population. In the following tabulation the first column has the family names in the order of population represented, and the second column has the family names (followed by the number of individual landholders) in the order of the value of lands owned.

Population	*Valuation*
1. Barriga.	1. Ponce (16) $16,750.
2. Herrera.	2. Barriga (21) $15,030.
3. González.	3. Torres (9) $11,910.
4. Fuentes.	4. Fuentes (12) $11,240.
5. Chávez.	5. Herrera (16) $8,810.
6. García.	6. Rodríguez (6) $8,000.
7. Calderón.	7. Chagolla (12) $7,610.
8. Rodríguez.	8. Díaz (19) $7,500.
9. Campuzano.	9. Villaseñor (2) $7,240.
10. Coria.	10. Gutiérrez (5) $6,800.
11. López.	11. Milián (4) $6,370.
12. Medina.	12. Calderón (12) $6,300.
13. Peña.	13. Villaneuva (1) $5,990.
14. Valdovinos.	14. Paramo (1) $5,360.
15. Ortiz.	15. Medina (6) $5,320.
16. Hernández.	16. Villalobos (4) $4,830.
17. Estrada.	17. Arias (5) $4,670.
18. Torres.	18. Chávez (7) $4,340.
19. Guzmán.	19. Sierra (3) $4,240.
20. Ponce.	20. Ruiz (9) $4,190.

It will be noted that the family names associated with the old Hacienda Itziparamuco and its successor haciendas and ranchos (Ponce, Barriga, Herrera, Díaz, Milián, Chávez, Ruiz, and Sierra) own lands out of proportion to the population they represent, while the Indian families (Peña, Valdovinos, López, Estrada, Guzmán, and Chagolla) own comparatively little land. Some of the figures are slightly misleading since in some cases a man's property will be listed separately from that of his wife (who has a different surname), and also in some cases nearly all of the land in a given family-name group actually will belong to but one or two individuals (e. g., one Rodríquez owns $6,000 of the Rodríguez total, and one Fuentes owns $8,300 of the Fuentes total). Three-fourths

of the rural property is owned by 170 individuals bearing 20 different family names. The property of the Comunidad de Quiroga is valued at $9,090 (this does not include private property of the members of the *comunidad*) which can be compared with the 1945 valuation of $100,000 for the lands of the Comunidad Indígena de Santa Fe, and $32,790 for the lands of the San Andrés community.

Under the present laws even the largest landowners in the Quiroga area are considered to be small property holders, and are protected by the changes (1940, 1943, 1945, 1947) in the Federal constitution (the famous *Articulo* 27) and in the agrarian code. The lands subject to seizure must be within 7 km. of the center of the agrarian community requesting lands. No land may be taken from an individual who does not own more than 100 hectares of *tierra de riego* or *jugo*, or its equivalent in other classes of land. One hundred hectares of *riego* are considered to be the equivalent of 200 hectares of *temporal*, or 400 hectares of *pasto*, or 800 hectares of *cerril*. La Tirímicua, the largest holding in the area, probably does not contain more than 260 hectares of land of all classes. The median-sized parcel is valued at between $200 and $300 and probably comprises second and third class *temporal* amounting to about 2.5 hectares. The absolute range in the size of rural holdings (other than house plots) is from 3/100 of a hectare (3 *áreas*) up to about 260 hectares.

The total area of rural property in the Quiroga area is highly problematic. In the absence of surveys and adequate statements in the tax returns we must rely on estimates. We had planned to make an instrumental survey (plane table, alidade, compass, and steel tape) of the area but public opinion quickly forced us to give up the plan. We did make a number of sketch maps based on some triangulations (made at the end of our first stay) and whenever possible we took notes on field areas based on casually paced distances and surreptitious use of a pocket compass. As stated previously, we estimated the area of Quiroga and its ranchos to be about 52 sq. km. or 5,200 hectares. Perhaps 27 percent of this area is occupied by the town proper of Quiroga, the buildings in the ranchos, public roads and barren unclaimed spaces, and bare rocky peaks and completely denuded slopes. The remaining 73 percent comprises the rural properties. We have estimated about 53 percent of the total to consist of *pastal*, *monte*, and *cerril* (essentially nonarable lands included within the rural properties). At a mean value of $20 per hectare this would amount to $55,120. The remaining 20 percent is arable farm land, which probably is distributed: 2 percent of *riego* and *humedad* (104 hectares at a mean value of $500) worth $52,000, and 18 percent of *temporal* of all grades (936 hectares at a mean value of $100) worth $93,600. This would give a total value of $200,720 for rural property, which is quite close to the figures obtained from the tax rolls ($199,980). Our figure of 1,040 hectares of cultivated land compares well with the estimates we obtained from a number of the business men and farmers in the area. The concensus of their estimates was that there were about 1,100 hectares distributed as follows: In the vicinity of the Villa de Quiroga and extending southward to Patambicho and Zirandangacho, some 400 hectares of the best land in the area; in the general La Tirímicua area, about 300 hectares; in Icuácato and Sanambo, another 300 hectares; and in Atzimbo and Caríngaro about 100 hectares. Accepting the rounded estimate of 1,100 hectares of arable land, there would seem to be an average of about 27/100 of a hectare or 2/3 of an acre per person.

We did no more than scan the tax records on urban properties. Since these records commonly only gave the location of the plot (*suerte*, *finca*, *predio*, *solar*, *terreno suburbano*) by bounding street or streets, and practically never gave dimensions or areas, we could form no idea as to the range and average sizes involved. The most valuable plots were those in the center with the most costly buildings, and some others away from the center with water rights, numerous fruit trees, flour or *nixtamal* mills, tanneries, and tile factories. According to the 1940 census 357 persons owned urban property, and there were 570 households, which would indicate that about 2 out of every 5 households are living in rented houses. According to the same 1940 census 28 of the owners of urban property and 18 others in the town of Quiroga (a total of only 46 individuals) owned rural property. A check of the tax rolls revealed that approximately double this number actually owned rural property.

THE PEOPLE

Always, in the study of the cultural geography of an area, of greatest importance and interest are the people themselves. They can be studied, analyzed, and reported upon from many points of view. In this section we will consider the inhabitants of the Quiroga area demographically; that is, along statistical lines concerned primarily with the data commonly found in population censuses and in vital statistics.

POPULATION CENSUSES

Immediately after the conquest of the Pátzcuaro Basin and Michoacán, the Spaniards were concerned with making use of the conquered Indians and with converting them to Christianity. Groups of Indians, described in terms of village units and areas, were entrusted to conquerors and their relatives (*encomenderos*), to the representatives of the crown (*corregidores* and *alcaldes mayores*), and to the priests of the missionary orders. All conquered Indians, with a few exceptions, had to provide a certain amount of tribute or tax, in the form of work, food, precious metals, firewood, manufactures of fibers, wood, metal, stone, and terra cotta, etc. The Spanish Crown, through its Council of the Indies and audiencies and viceroys, made many regulations concerning such tribute. Periodically surveys were made of the tributary population in order to determine its capacity to pay. Such surveys constitute the first censuses for our area.

In 1522 when the Pátzcuaro region was conquered by Olid for Cortez, modern Quiroga was the little Tarascan village of Cocupa or Cocupao and several other neighboring small villages. This group of villages, together with all the other villages and towns of the lake basin, were considered to be parts or *barrios* of the capital city of Tzintzuntzan (also known as Michoacán). As late as 1581 the city of Michoacán (which by that time had moved its administrative center from Tzintzuntzan to the *barrio* known as Pátzcuaro) included 73 *barrios*, 15 within Pátzcuaro city and the remainder scattered over the basin and even outside at distances from 1 to 10 leagues. Each of the 58 outside *barrios* was termed a pueblo. None of the sixteenth-century censuses, grants to *encomenderos*, or lists of *barrios* or pueblos, published to date mentions Cocupao by name. We know that the Quiroga area was within the lands held by Cortez 1522–28/29, and after that it was held in the name of the Crown and in part by the *encomendero* Juan Infante and members of the family of the last *cazonci*—but this is merely indicated by the context of limits of grants and of enumerated pueblos. Consequently, we obtained no specific information as to population from the various *visitas*, *encuestas*, *tasaciones de indios*, and *tributos de pueblos de indios*. There may exist such information in the archives—in the divisions of *Tierras*, *Indios*, *Mercedes*, *Congregaciones*, and the like, but our brief examinations of the archives in Mexico City did not turn up such material.

POPULATION 1742–1822

From the title or *título* of the ancient República de Indios del Pueblo de San Diego de Cocupa and accompanying documents, and from manuscripts pertaining to congregations in Michoacán, we know that Cocupao was formed or reformed by congregating several small villages in 1534 or earlier, and that there was a later congregation in 1603 which brought in the populations of several other villages. But we do not know the names of all the constituent villages, nor do we have population data. By implication, what is now Quiroga was a small unimportant village until the end of the colonial period and the early part of the 19th century. The earliest figures are provided by Villaseñor y Sánchez (1746–48) (cosmographer for New Spain, and a native of Michoacán) who gives the figures of 30 families of Spaniards, 60 families of mestizos and mulattoes, and 70 families of Indians, for the Pueblo of San Diego Cocupa in 1742. By elimination of other pueblos mentioned in the area (e. g., Tzintzuntzan, Santa Fe, Teremendo, Capula), Cocupa of 1742 embraced essentially the area of this report. (For discussions of the compass of the entities known as Cocupao and Quiroga, see the sections on Land Settlement, pp. 13–14, 23–25; Government, pp. 97–102; and Religion, pp. 200–201.) If we arbitrarily assign five individuals to the family, as is commonly done in converting family figures to total population in colonial Mexico, we obtain a population figure of 800 for 1742. Various surveys and censuses were taken in the period 1766–86 to provide basic data for the administrative reforms that culminated in the establish-

ment of entendencies in 1786–87. Among the resultant Relaciones Geográficas, censuses, etc., we have not located anything pertaining to Cocupao-Quiroga. Probably there is something in the great 1792–94 (essentially 1793) census ordered by the viceroy Revilla Gigedo, but we did not examine the pertinent documents in the archives. It was from this census that Humboldt (1811) derived much of his information on New Spain. The first exact figures we find in the statistical analysis of Michoacán in 1822 by Martínez de Lejarza (1824), who gives San Diego Cocupao (with the same implied area as that covered by Villaseñor) a population of 2,752 (table 2). The considerable growth of Cocupao in population and in importance is supported by the facts that in 1742 it was smaller in population than Tzintzuntzan and was a dependency of that town, while in 1822 Cocupao had the largest population of any community in the northern half of the Pátzcuaro Basin and as early as 1820–23 was the seat of municipal government for the area now embraced in the *municipio* of Quiroga.

TABLE 2.—*Population, 1742 and 1822*

Pueblo	According to Villaseñor, 1742 (1746–48)		According to Martínez de Lejarza, 1822 (1824)
	Families	Individuals	Individuals
Ihuatzio and Cucuchucho	88	440	562
Tzintzuntzan	247	1,235	2,254
San Diego Cocupao	160	800	2,752
Santa Fe de la Laguna	120	600	1,151
San Jerónimo Purenchécuaro	35	175	489
San Andrés Zíróndaro	(1)		519

[1] Not given.

POPULATION 1822–79

During the difficult and often anarchic period from the revolution against Spain until the *Paz Porfiriana* which began in the late 1870's, there were only a few estimates of population of the village, the municipality, and the parish. These estimates are often contradictory and often manifestly very erroneous. For whatever value they may possess, we present the estimates in table 3. It will be noted that the estimates of 1868 and 1879 are termed censuses. These figures were provided by the municipal authorities on the basis of information from the civil register and from the chiefs of blocks, dependent pueblos, and ranchos, and cannot be considered as formal censuses. This is true also for the so-called censuses of 1882 and 1889.

TABLE 3.—*Population, 1822–79*

Census	Quiroga proper	Ranchos	Municipio	Parish
Martínez de Lejarza, 1822 (1824)	[1] 2,752		4,911	2,752
García Cubas, ca. 1860 (1888–91)	[1] 6,018			
Coromina, 1861 (1886–1923)			12,000	
Romero, 1853–62 (1860–63)				8,000
Census of May 1, 1868 (Memorias 1869)			8,655	
Census of 1879	3,640		[2] 12,173	

[1] Including ranchos.

[2] On May 1–8, 1874, Tzintzuntzan and its dependencies were attached to the *municipio* of Quiroga and remained a part of Quiroga until Sept. 19–24, 1930.

POPULATION 1882–1945

In 1882 there was founded the Federal *Dirección General de Estadística* within the ministry of development (*Fomento*), and after that date there was available advice and supervision from Mexico City. This Federal census bureau, after various changes in name and departmental location, resumed the original title of *Dirección General de Estadística* in 1923, and has been a dependency of the *Secretaría de la Economía Nacional* since 1933. The first national census was taken in 1895, which was followed by others in 1900, 1910, 1921, 1930, and 1940. These various national censuses vary greatly in the subjects censused and the quality of the work. The 1895 census returns were published by states and constituent districts, therefore data on the municipalities are lacking. The returns of the 1910 census were published in abbreviated form in 1918–20. The census scheduled for 1920 was held in 1921, and the volume on Michoacán was not published until 1927. This census is suspected of having been tampered with politically and padded. The more recent censuses are great improvements over all earlier censuses. Preliminary to a number of population censuses there were made (1909, 1921, 1929, 1939, and earlier years) censuses of houses and inhabitants that provide some gross population figures. In table 4 are given figures from the census of 1882 to our census of 1945.

An inspection of the figures from 1822 to date reveals several presumptive facts. The gain from 1822 to 1861 is not large, but it is reasonable considering the poor health conditions and the civil wars that obtained during that period. The great decline from 1861 to 1868 probably represents the difference between a rounded estimate for 1861 and a more exact count in 1868, and the losses resultant from the civil wars and the French Intervention of the 1860's. Most of the gain regis-

TABLE 4.—*Population, 1882–1945*

Year of census	Source of data	Municipality of Quiroga		Quiroga proper	6 dependent ranchos of Quiroga	Quiroga proper and ranchos (area of study)	Pueblo Santa Fe de la Laguna and dependencies	Pueblo San Jerónimo Purenchécuaro	Pueblo San Andrés Ziróndaro	Tzintzuntzan and its dependencies as of date of census
		As of date of census	As of 1945							
1882 [1]	Memorias	12,483	9,497	3,640	1,119	4,759	1,974	1,263	1,501	2,986
1889 [1]	do	13,603	10,581	4,033	1,477	5,510	2,133	1,357	1,601	3,022
1895 [1]	Census	12,486								
1900 [1]	do	12,357	9,205	3,404	1,029	4,433	1,721	1,404	1,647	3,152
1910 [1]	do [2]	12,091		3,173						
1921 [1]	do	9,102	6,414	1,832	784	2,616	1,770	1,255	773	2,688
1930 [1]	do	10,879	7,925	2,657	917	3,574	1,960	1,209	1,182	2,954
1939	Edificios	9,299	9,299	3,212						
1940	Census	8,672	8,672	3,009	890	3,899	2,067	1,527	1,179	5,429
1945	Brand			3,161	998	4,159				

[1] Tzintzuntzan was a part of the municipality of Quiroga.
[2] The remainder of the 1910 data are available, but my library is not at hand and this census is lacking in the University of Michigan library.

tered between 1868 and 1879 can be attributed to the addition of the population of Tzintzuntzan and its dependencies. The changes registered from 1879 to 1882 to 1889 in the municipality and in the town of Quiroga indicate a rather slow but consistent gain in the municipality, although the lack of change from 1879 to 1882 in the town of Quiroga is suspicious. There was a slow decline in the municipality, and a faster decline in Quiroga and its ranchos between 1889 and 1910. What could have occasioned this is uncertain, although the coming of railroads into the region during this period undoubtedly contributed to the reduction of the importance of Quiroga as a transportation and trade center. Apparently the high-water marks in the population and importance of Quiroga and its municipality were reached between 1852 and 1862 (when Quiroga became a *villa*, and then capital of a district), and again between 1887 and 1907 (when there was the greatest agricultural, industrial, and construction activity in the history of Quiroga). Between 1910 and 1921 Quiroga participated in the great regression produced by the revolution. Low-water actually was reached between 1914 and 1918, when portions of the town were sacked and burned, and some suburbs were abandoned. There was a general movement away from the ranchos and from Quiroga itself to larger centers of population which were not at the mercy of the bandit and revolutionary groups that preyed on so much of Michoacán and Mexico at this period. Between 1920 and 1930 there was some natural growth, but much of the growth is locally attributed to the return of natives from the United States and other parts of Mexico. There is indicated a slight increase in Quiroga, and in the area of the present municipality, from 1930 to the present, although the ranchos have gained proportionately more. The population figures derived from the building census of 1939 can be disregarded since that census was not primarily concerned with population. The very small gain between 1930 and 1940, and even smaller rate of gain indicated between 1940 and 1945, for the town of Quiroga is the most striking phenomenon in the recent population history of Quiroga.

According to official Mexican statistics, the increase of population for all Mexico between 1930 and 1940 was 18.7 percent, and for the State of Michoacán it was 12.7 percent. During this period, for the area covered by the present municipality of Quiroga the increase was only 9.4 percent, and for Quiroga town and its ranchos the increase was a trifle less than 9.1 percent. Such a small rate of increase, despite the improvement of business due to highway improvement in this period, is difficult to explain. Part of the explanation rests in the birth and mortality rates which are discussed later. However, probably the resources of the natural environment in the area are so strictly circumscribed that growth (natural increase or total growth) never will be considerable. Undoubtedly the insufficiency of water for irrigation and for domestic consumption is the single greatest limiting factor. A comparison of densities further indicates that Quiroga probably will not grow greatly in the future. The 1940 census gives the present municipality of Quiroga a density of 105.76 persons per square kilometer. Mathematically this density would make the area of the municipality about 82 sq. km., although the 1940 census credits Quiroga with 120 sq. km., and the *Secretaría de Hacienda* (in its 1940 monograph on

Michoacán)[1b] makes the area 100 sq. km. Accepting the largest estimate of 120 (which we believe is somewhat too large), we get a density of 72.2 persons to the square kilometer. This can be compared with the figure of 19.4 for the State of Michoacán, and 54.9 for the tiny State of Tlaxcala which is the most densely populated state in Mexico. At the most, the municipality of Quiroga contains less than 3½ acres of land per individual, and this includes mountain, lava flow, and eroded barren slopes, as well as some arable land. It will be noted that during the past nearly 130 years the population of the area covered by the present municipality of Quiroga has oscillated between about 5,000 and 10,000 or 12,000; that of Quiroga and its ranchos between about 2,700 and 5,500; and that of Quiroga town between about 2,000 and 4,000. Unless the water supply is increased materially, probably the above-mentioned entities will never greatly exceed the previously attained upper limits. Excess population has been, and will continue to be, siphoned off to the great labor markets of the large Mexican cities, northern Mexico, and the United States. For many years now Michoacán has been the leading Mexican entity in the provision of manual laborers or *braceros* for the United States, and apparently Quiroga has provided more than her share. This matter is considered elsewhere.

POPULATION BY SEX

Mexico is a land with a long-established population, and as one consequence there is a slight superiority of females over males—for both the Republic of Mexico and the State of Michoacán, the ratio is about 49 males to 51 females. Such a condition has obtained in the Quiroga region for a long time, as is shown by table 5.

TABLE 5.—*Distribution of population by sex*

Year	Municipio de Quiroga		Villa de Quiroga		Ranchos		Villa and ranchos	
	Male	Female	Male	Female	Male	Female	Male	Female
1822							1,409	[1] 1,422
1868	4,210	4,445						
1889			1,962	2,071	707	770	2,669	2,841
1900	6,149	6,208	1,621	1,783	525	504	2,146	2,287
1910	5,941	6,150						
1921	4,511	4,591	849	983	409	375	1,258	1,358
1930	5,334	5,545						
1940	4,323	4,349	1,471	1,538	477	413	1,948	1,951
1945			1,484	1,677	512	486	1,996	2,163

[1] Does not agree with totals.

[1b] See: Mexico. Secretaría de Hacienda y Crédito Público, 1940.

In 1930, while Tzintzuntzan was still included in the municipality, females constituted 50.97 percent of the population, or almost exactly the state and national percentage. In 1940 the figure had changed to 50.14. This lowering of the proportion of females to males may represent only a higher concentration in the Tzintzuntzan area that had been withdrawn since the 1930 census. Within the town of Quiroga proper, females comprised 51.11 percent of the population in 1940, but this rose to 53.04 percent in 1945. Much of this change may be attributed to the *bracero* program which attracted so many men from Michoacán in the 1940's, and also the much higher wages that labor commanded in northern Mexico and the large urban centers. An anomaly is the rather consistent predominance of males over females in the ranchos. When the total area of Quiroga town and its ranchos is considered the percentage of females is found to be 50.03 in 1940 and 52.00 in 1945. The only explanation that occurs to us for the local preponderance of males in the ranchos is that the population there is almost entirely agricultural, and since most of the families own farm lands (excepting in the two minor ranchos of Zirandangacho and La Tirímicua) there is plenty of work for all.

POPULATION BY AGE

In our census we did not ask for the specific age of individuals. The information is available in the general census of 1940, and the general trends probably have not changed much since that census. We did list individuals as adults or children; all married individuals, boys more than 20 years of age, and girls more than 17 years of age were considered to be adults, and all others were listed as children. We give the information derived from the censuses of 1940 and 1945, but the data are not very reliable. In checking the civil register and the ages given in the 1940 census we have discovered a number of discrepancies. In evaluating the data on ages a number of points must be kept in mind. In the first place, most of the individuals are not time- or calendar-conscious, and often make honest mistakes in remembering their age. The birthday or the saint's day is the important thing to celebrate, and which year it represents is not considered important. Individuals between about 14 and 29 years of age are usually much more accurate in their memory or

knowledge than are older and younger persons. However, there is a common tendency to add 1 year to the real age. This is because a person who has, for example, passed his twentieth birthday is in his twenty-first year and will think of himself as being 21 years of age. Also, parents are very apt to say that a baby that is between 9 and 12 months of age is 1 year old. Granting the ignorance as to real age that obtains, it is quite natural that the ages that terminate in "0" or "5" should be represented unnaturally in the statistics. It will be observed that with the exception of the age of 15 years, all ages terminating in "0" or "5" are better represented than the age on either side. Furthermore, commencing with the age of 35 the "0" and "5" years are superior to the sum of the adjacent years (excepting age 55); and obviously the ages of 50, 60, and 70 are the merest approximations. It will be noted that age 41 is represented by only 13 persons, which number is not undercut until age 57. This is explained in Mexico by an event, during the Díaz regime, which involved 41 homosexuals, and ever since the number 41 has been taboo—especially for men. Curiously enough, ages ending in 7 are usually the most poorly represented in any group of 10; e. g., 31–40, 51–60, 61–70, and 71–80; and where 7 is not the lowest it is 1 as from 11–20, 21–30, and the 41 ties with 47 in the 41–50 group. Of course, it is expectable that the numbers before and after 0 and 5 (9, 1, 4, and 6) would be poorly represented, but the actual situation does not fully conform with that expectancy. From the above it is evident that the following tabulation of distribution of population by age in Quiroga and its ranchos in the 1940 census is merely a general indication of the true condition. In this connection we might mention that on numerous occasions, while working on records in the civil registry, we heard the clerk decide on some arbitrary age for an individual who was uncertain; e. g., some relative who had come in to make a declaration in connection with a birth, marriage, or death.

In 1940 the population of Quiroga and its ranchos had modal ages of 3 and 8 years (133 persons each), a median age of 18 years, a mean or average age of 22.8 years, and a range from newly born to 98 years. Of this population 42.98 percent were under 15 years of age. The 51 persons over 70 years would make this almost exactly 43 percent. This can be compared with a percentage of 39.3 in 1930 for persons under 15 years of age in all of Mexico. Either figure represents entirely too large a group of dependents. Even allowing for the absent *braceros* and others who remit money to Quiroga, the proportion of those normally not gainfully or usefully employed is much too large. In part this situation explains the low standard of living that obtains in Quiroga and elsewhere in Mexico.

Age distribution, March 6, 1940[1]

Age (years):	Persons	Age (years)—Con.	Persons
Less than 1	116	45	58
1	112	46	31
2	120	47	13
3	133	48	35
4	114	49	15
5	125	50	72
6	115	51	23
7	122	52	32
8	133	53	13
9	89	54	18
10	116	55	36
11	58	56	23
12	119	57	6
13	91	58	11
14	113	59	10
15	79	60	57
16	87	61	9
17	65	62	4
18	105	63	7
19	66	64	5
20	83	65	20
21	36	66	10
22	65	67	3
23	56	68	6
24	57	69	5
25	66	70	20
26	51	71	3
27	54	72	4
28	51	73	3
29	42	74	2
30	70	75	8
31	34	76	1
32	44	77	0
33	38	78	2
34	35	79	2
35	85	80	9
36	45	81	4
37	29	84	1
38	49	85	4
39	39	86	1
40	88	89	1
41	13	90	3
42	37	91	2
43	29	98	1
44	15		

[1] We have no record of age for 17 individuals.

TABLE 6.—*Distribution of unmarried girls under 18 and unmarried boys under 21*

Year	Total population	Girls		Boys		Combined percentages
		Number	Percentage of total population	Number	Percentage of total population	
1940	3,899	908	23.28	1,097	28.13	51.41
1945	4,159	1,000	24.04	1,014	24.38	48.42

Unmarried girls under 18 and unmarried boys under 21 years of age in 1940 and according to our census of 1945 were distributed as shown in table 6. The proportions for the females seem to be in accord, but the reduction in absolute numbers as well as percentage of unmarried boys from 1940 to 1945 probably represents a weakness in our census of 1945. We have reason to believe that often boys between 16 and 20 years of age would be included among adults merely because they were gainfully employed. In any case, an unmarried minor population that constitutes about half of the total is a significant fact.

AGE AND SEX

The distribution of sexes by age, according to the census of 1940, in general resembles the norms determined for Mexico by the 1930 census but there are some important deviations. In the first place, the 1940 census gives Quiroga almost as many males as females (only 3 more females). Because of this virtual equivalence, various of the age-sex concentrations do not show up so clearly as they might if there were a more decided predominance of the females. In 1930 males predominated at all ages from newly born babies through the 10- to 14-years group, and in the groups from 55 to 59, 65 to 69, and 75 to 79; and females predominated in all age groups from 15 to 19 through 50 to 54, and also 60 to 64, 70 to 74, and from 80 upward. In Quiroga the males predominate up to 15, but the superiority of females from 15 to 55 is broken in the 25 to 29 and 30 to 34 groups, and there are some other minor differences, as can be seen in table 7.

Three facts stand out in the statistics given above. Quiroga has a young population, with 53.52 percent of the people (55.18 percent of the males and 51.77 percent of the females) of an age under 20 years. Males predominate in the ages

TABLE 7.—*Distribution of sex by age, 1940*

Age (years)	Total	Male	Female
Under 1	116	53	63
1	112	57	55
2	120	69	51
3	133	76	57
4	114	53	61
0–4	595	308	287
5–9	584	302	282
10–14	497	261	236
15–19	402	198	204
20–24	297	144	153
25–29	264	135	129
30–34	221	115	106
35–39	247	109	138
40–44	182	91	91
45–49	152	64	88
50–54	158	70	88
55–59	86	44	42
60–64	82	35	47
65–69	44	22	22
70–74	32	19	13
75–79	13	8	5
80–84	14	6	8
85–89	6	4	2
90–94	5	2	3
95–99	1	0	1
Age uncertain	17	11	6

0–19 (excess of 60 over females), and also from 0–34 (excess of 66), but the greatest concentration is in the range 0–14 (excess of 66); while the females predominate in the range 20–99 (excess of 68), and especially 35–69 (excess of 81). Apparently if a child can get through the critical years between birth and 9 years it has an excellent chance for survival, although women (once they have finished bearing children) have better chances in middle and old age than do men.

VITAL STATISTICS

PARISH AND CIVIL REGISTERS

At present the vital statistics in Mexico are obtained from the decennial censuses, special censuses, and from the civil register. However, the oldest source of such data is to be found in the parochial books or registers which covered baptisms (the equivalent of a registry of births among a wholly Roman Catholic population), marriages, deaths, and other subjects such as confirmations and Christian census or visitation of the parish (*status animarum*). Presumably such registers were kept from early colonial times onward to the present, although the practice, forms of inscription, and archival preservation, were not fully regulated until the Council of Trent (1545–63), the Milanese Councils (1565–82), the Council of Cambrai (1586) and the adoption of the Roman Ritual (1614). A Franciscan convent and a missionary church were established in Cocupao-

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Quiroga early in the sixteenth century, and this parish was secularized 1786–87. However, no registers were found for dates earlier than 1781. We can only guess that the earlier registers may be with the archives of the almost extinct Franciscan province of Michoacán (in Acámbaro or Celaya) or in the sequestered archives which are scattered from Morelia to Mexico City and fragments of which are to be found in foreign libraries.

The present archives of the parish of Quiroga contain *Libros de Bautismos* (Baptismal inscriptions) Nos. 1 to 17 (excepting books 7, from 1865 to 1871, and 9 to 11, from 1884 to 1889) which cover the period 1781 to date; *Libros de Matrimonios* or *Casamientos* (Marriage inscriptions), from 1782 to date; *Libros de Entierros* (Burial inscriptions), from 1806 to date; and other types of record. Possibly copies of the missing material may be found in the episcopal archives in Morelia, since canon law requires that annually copies of all parish registers (excepting the *status animarum*) be sent to the secretariat of the bishopric. As mentioned in a later section on Names and Ethnic Origins, beginning in 1781 the baptisms of the various castes were kept in three different books. We did not have the time to scan the different books and determine when the segregation of castes ceased actually in the Quiroga parish books, but it was some time within the period 1831–87. In the *Libros de Entierros de Muertos* were given the date of death, name of the deceased, cause of death, age, name of some near relative, and where buried—at least from 1856 onward.

In the period 1857–59 various laws were passed by the liberal Mexican Congress in an attempt to break the hold of the Roman Catholic Church on the social-political-economic life of the people. Among these laws were some which established a municipal *registro civil* or civil register, removed the cemeteries from ecclesiastic control, and legalized a civil form of marriage. Between 1871 and 1874 additions were made to the law of civil registry, but since that period no fundamental changes have been made. The *registro del estado civil* concerns births, marriages, and deaths and burials. The municipal president is the honorary judge of the civil register and is supposed to sign the various books. The actual work of inscription is entrusted to a scribe or secretary, who, in Quiroga, has been Don Rafael Huape since January 6, 1936. Because of clerical opposition, the cost and time and difficulty involved in going to the office of registry, and the lack of personnel and supplies, the records in the registry books are never complete. This is especially true for the period 1859 to 1929. Mexican statisticians calculate (on the basis of comparisons of civil register entries with those in the parish registers) that between 1859 and 1895 less than one-third of the births were entered; the percentage rose to about 70 for the period 1895 to 1900; was 81.4 percent from 1921 to 1930; and is now more than 95 percent. The requirement, since 1929, of a certificate from the civil register before a child may be enrolled in school or baptized in church has brought about almost complete registry of births. The chief exceptions are stillbirths and babies who die within a few days after birth. Since no one may be buried in the cemetery without a certificate from the civil register the record of deaths has consistently been the most complete, excepting always the stillbirths and the very young. The matrimonial data are the most incomplete since there can be three forms of marriage—common-law or *unión libre* with no ceremony of any kind, just the religious marriage, which is officially considered no better than a common-law marriage, and the civil marriage which is registered.

The tendency has been to have only the religious marriage or no ceremony at all, but in recent years a majority of the marriages combine the civil and the religious. Beginning in the period 1882–92 national vital statistics began to be compiled on the basis of data from the civil register. In the State of Michoacán such records began about 1880.

The civil register office or *juzgado del estado civil* in Quiroga is located on the upper floor of the municipal building where it occupies a dingy unlighted room in which is also located the office of the State telephone network. In this room are kept all the current books as well as all that exists of the civil register archives. Apparently a civil register was opened in Quiroga in 1860. At that time the register area covered essentially what is the present municipality of Quiroga. In 1871 Tzintzuntzan and its dependencies were added, and they continued to report to the Quiroga office until September of 1930. When we checked the archives we found the following records: *Libros de actas de nacimientos* 1862, 1863, 1868, 1873–91, 1893, 1895–97, 1899–1905, 1907–15, 1919 to date.

By law duplicate copies must be sent to the State capital, and in Morelia we found copies for the missing years 1861, 1867, 1892, 1894, 1898, 1906, and 1916. There is a complete lack of record for 1860, 1864–66, 1869–72, and 1917 and 1918. There were *Libros de actas de defunciones* for 1860–64, 1867, and 1868, 1873–80, 1882–1917, and 1920 to date. The missing years were not available in the State archives. There were *Libros de actas de matrimonios* for 1861–63, 1867, and 1868, 1873–87, 1889 and 1890, 1893–97, 1899–1905, 1907–13, 1916, 1923, and 1926 to date. The State archives supplied 1888, 1891 and 1892, 1898, 1901, 1906, 1914 and 1915, 1921 and 1922, and 1924 and 1925. It will be noted that the chief lacks occur for the periods 1860–72 (which was a period of anarchy caused by the Wars of Reform, the French Intervention, and the chaotic conditions before Díaz came into power) and 1914–25 (the main era of the revolution, of banditry, and Cristero activity). It is known that the bandit Inez Chávez García burned some of the books in 1918, and that the Cristeros burned others in 1928. Many of the books we handled, with dates from 1860 to 1928, were smoked or charred in varying degrees. Since 1937 printed form books have been issued and authorized by the State government. Prior to that date the books varied considerably in form, and they were authorized by the local municipal president and the Federal revenue agent. A set form was used for *defunciones* or deaths in 1920 and 1921, and the present forms for all three sets of books came into use in 1944. Fingerprints were first used in 1937. All entries are made in longhand.

BIRTHS

Births are entered with running numbers for all births registered in the municipality. The child is brought to the office as soon as possible after birth by some relatives (usually the father and a grandmother or aunt) and is fingerprinted. In the record or *acta* the following data are entered: father's name, birthplace, occupation, and age; mother's name, birthplace, and age; sex of child, date born, name, and domicile. Also the nature of the married state; e. g., common-law marriage or civil marriage, is entered. We copied all entries for Quiroga town and its ranchos for the years 1940 to 1945 inclusive, and also 1873, 1863, and 1862. The earlier records differed from the later ones chiefly in the greater proportion of those parents or witnesses who could not sign their names, and in the indication (for a time) if the parents were Indians or non-Indians. A number of sources for error are apt to occur in the books. Late registration will cause a number of December births to be recorded in the book for the following year. Between the parents and the secretary a number of variations in the spelling of proper names are produced. Some entries are highly illegible, and occasionally one or another statement (such as age, domicile, or occupation) will be omitted. There are a few births in transient families, and occasionally births are registered from communities on the borderlands of the registration area, e. g., Cuenembo, Tzintzimacato, and El Tigre. We were told that a number of stillbirths, prematures or abortions, and illegitimates are recorded neither under births nor deaths. For comparative purposes we show the births in the municipality of Quiroga when its area and/or population were greater than at present. It will be observed (table 8) that the proportion of total registry varied considerably.

TABLE 8.—*Birth records in Quiroga*

Year	Total municipal	Quiroga and ranchos	Male	Female	Sets of twins	Father unknown
Earlier births:						
1861	265	90	48	42	----	----
1862	150	45	28	17	----	----
1863	104	17	10	7	----	----
1873	306	160	79	81	----	----
1880	373	----	193	180	----	----
1881	357	----	179	178	----	----
1882	412	----	210	202	----	----
Recent births:						
1940	265	185	92	93	2	----
1941	268	171	82	89	2	1
1942	258	185	105	80	----	1
1943	----	172	106	66	4	----
1944	286	197	109	88	3	1
1945	308	229	107	122	3	1
Total	----	1,139	601	538	----	----

Since we did not analyze the birth records for 1939 it was not possible for us to check the births in the 12 months prior to the census of March 6, 1940, and compare this number with the number of children listed as under 1 year of age in the census. Nor did we have the time to compare the returns in the civil registry with those in the parish register. We can be certain that the births and birth rate in the Quiroga area are somewhat higher than indicated. In 1940 Quiroga had a birth rate of 47.44 births per each thousand of population, which compares with

42.3 for all of Mexico in 1940 or the rates of 44.0 for Mexico and 46.3 for the State of Michoacán averaged over the period 1936–40. The 1945 rate in Quiroga was an exceedingly high 55.06 per thousand of total population; and the average rate for 1940–45 was 47.1. Although more females than males have been born in various years, the superiority in number of males over females is so marked in 2 or 3 years out of every 5 that there are always more male than female children born in any span of 3 years or longer. For the period 1940 to 1945 the ratio of males was 52.7 to 47.3 for females. What determines the cyclic or eccentric predominance of one or the other sex we do not know.

There appears to be a certain rhythm or cycle to births within the year. During the 6 years 1940 to 1945, there were 116 births in June, and June was in the top 4 birth months in 3 of the 6 years; there were 115 births in January, and January was one of the top 4 months in 5 of the 6 years; there were 113 births in May, and May was in the top 4 months in 3 of the years; and in October there were 112 births, and October was in the top 4 months in 3 of the years. There were 76 births in February, and February was one of the 4 low birth months in 5 of the years; March had 79 births, and was in the low group in 3 years; April had 80 births, and was low in 5 years; and there were 84 births in September, which was in the low group in 2 years. From high to low number of births the sequence is June, January, May, October, July, August, November, December, September, April, March, and February. Although the addition of a few more years of record might alter some of the relative positions, it is clear that January, May, June, and October are consistently the leading birth months, and that February, March, and April are the months of fewest births. From these data we derive the conclusions that there are the most conceptions in August, September, and April, and the fewest in May, June, and July. It is possible that these critical periods may have some connection with the various seasons of planting, cultivating, and harvesting of the chief crops, but the relationships are not apparent to us. It is possible that the May–June–July period of transition from extreme heat and dryness to the wet season with accompanying physiologic reactions (including increase of pulmonary diseases and various fevers such as typhoid) may have some bearing on the small number of conceptions. Considered by sexes, the distribution is somewhat different. There were the most male births in January (60), May (59), and June (59), and the fewest in March (41), November (42), and December (42); while there were the most female births in October (61), June (57), and January (55), and the fewest in February (28), April (29), and September (35). However, a longer series should be studied before any conclusions can be made positively.

MARRIAGES

As has been mentioned, civil marriage is not absolutely mandatory, therefore the records in the civil registry are far from complete. For the years that we examined, the number of civil marriages in Quiroga and its ranchos were: 1945—60, 1944—59, 1943—42, 1942—34, 1941—44, 1940—47, and 1939—62. We would guess that at least three-fourths of the unions are now ratified with a civil marriage, and nearly all of these civil marriages are succeeded by a religious marriage. We made no analysis of the civil marriage records excepting as regards ages, and for this we considered only the marriages in 1945 and 1944. In six of the 119 marriages the woman was the older, in six cases the ages were the same, and in six cases the age of the woman was not given. The greatest discrepancies in age were in marriages between a man of 55 and girl of 19 (36 years), a man of 56 and a woman of 32 (24 years), and a man of 39 and a girl of 18 (21 years). The median difference in age is 4 years, the modal difference is 2 years, and the average of the differences is 5 years. The males ranged in age from 16 (which is the lowest permissible age for a male) to 56, with the median at 22, the mode at 21, and the average of the ages 24.8 years. The females ranged in age from 15 to 48. The most popular ages for marriage were 18 (the median and mode with 21 instances), 17 (17 cases), 15 (15 cases), and 16 and 19 (with 11 cases each). Probably many of the girls listed with an age of 15 actually were 14, which is the lowest legal age for marriage of females. This can be compared with ages of 12, 13, and 14 in a number of our States, such as Michigan, Mississippi, New Hampshire, and New York. The favored months for marriages (at least for civil marriages) are April, November, January, and February,

which had 155 or 44.5 percent of the 348 civil marriages in the period 1939–45. The least favored months were September, June, August, and July, which had 83 marriages or 23.8 percent of the total. It is evident that the month of marriage has very little to do with the month of heaviest conception.

CIVIL STATUS

Although *estado civil* or civil status is not recorded as such in the civil register, it can be derived from the records. Actually, the census gives us the best picture of the situation. Since we did not inquire into this matter, the following discussion is based on the 1940 and other censuses. The various civil statuses as listed in table 9 are: Child (under 16 for a male and under 14 for a female), single (unmarried males 16 or older, and unmarried females 14 or older), widowed (widower and widow), divorced, and married (common law, religious, civil, and civil-religious).

TABLE 9.—*Civil status in 1940*

Status	Males		Females		Total
	Age (years)	Number	Age (years)	Number	
Child	0–15	912	0–13	759	1,671
Single	16–75	316	14–91	352	668
Widowed	23–91	52	18–98	142	196
Divorced				4	4
Married:					
Common law		14		28	42
Civil		17		19	36
Religious	17–80	152	22–85	152	304
Civil-religious	18–85	481	16–81	484	965
No data		4		11	15
Total		1,948		1,951	3,899

Single males or bachelors have a median age of 20 years; the modal age is 18; and five-sixths of the bachelors are between the ages of 16 and 25. Single females or maids have a median age of 18 years; the modal age is 14; and 72 percent are between the ages of 14 and 23. Widowers have a median age of 58 and widows have a median age of 54. There are more widows than widowers, and both absolutely and proportionately the widows are both younger and older than the widowers. In general men are more apt to remarry after the death of a spouse than are women. Many of the men listed as married have been widowed one or more times, but this is rarely true for the women. In the ranchos, and especially in Sanambo, the widows and widowers are more apt to remarry than in the town of Quiroga, probably because of the larger families and the farms that must be attended. Women past their thirties tend to live longer than men, which would explain the greater absolute and average age of the widows in the oldest 20 percent. There are no divorced men, probably because a greater onus attaches to a divorced female than male, and it is difficult for them to remarry. There are a total of 1,347 married individuals (664 men and 683 women), who constitute 655 couples, 9 men whose wives live elsewhere, and 28 women whose husbands live away from Quiroga. This accounts for a total of 692 marriages or families. (If we add the divorced and the widowed we obtain the number of 892 theoretical families.) However, half of the women whose husbands were not living with them at the time of the 1940 census were married in common law (*unión libre*), and probably they had been abandoned. In 1940 civil-religious marriages accounted for 71 percent of the total. It is noteworthy that while the mean age of men who had civil-religious marriages was 36, and that of their wives was 33 (actually about a difference of 2½ years rather than 3 years), the mean age of men who had religious marriages was about 45 and that of their wives about 41. This would indicate an increasing use of the civil marriage ceremony. From the detailed statistics it would appear that married women do not live so long as single, divorced, and widowed women. This is probably because of the great drain entailed by bearing and looking after children, preparing meals, and doing the laundry. There were no married males or females under 16 at the time of the census. Evidently the marriage of girls of 14 and 15 is comparatively rare, but we wonder what happened to the several girls of 14 and 15 who were married in Quiroga in the 12 months just preceding the census of March 6, 1940. Either they moved away or else they aged rapidly after marriage.

THE FAMILY

The family statistically, as derived from censuses, is nothing more than the individuals of a household. The tendency in Quiroga is patrilocal, so that quite often a household will contain, for example, a man, his wife and children, a younger brother with wife, a yet younger brother or sister, and possibly the man's father or mother.

From the 1940 census and from our census of 1945 it is possible to obtain a break-down into families based on individual marriages; e. g., the household mentioned above would represent three families. This is different from a true immediate family which comprises a married couple and all of their living children, whether they are married or not or whether the children live with their parents or elsewhere (table 10). In 1940 Quiroga and its ranchos averaged 4.47 persons per family, and the average in 1945 was virtually the same—4.46. Slight local differences are manifest in family size. In 1940 the averages were (by quarters or *cuarteles*): *Cuartel* I—4.46; *Cuartel* II—4.20; *Cuartel* III—4.30; *Cuartel* IV—4.59; and the ranchos—4.80. Within the six ranchos the averages ranged from 4.30 for Atzimbo, through 4.70 for Icuácato, 4.80 for Zirandangacho, 4.90 for Carín-garo, and 5.10 for Sanambo, to 5.50 for La Tirí-micua. In general the wealthiest and most urban quarters (II, III, and I) and the richest and closest large rancho (Atzimbo) have the smallest families; while the poorest quarter (IV) and the smaller or more remote and rural ranchos have the largest families. There seems to be a slight correlation between wealth and urban situation and a tendency toward smaller families. Our 1945 census returned approximately the same situation, the sequence of family averages being as follows: *Cuartel* I—4.23; *Cuartel* II—4. 26; *Cuartel* III—4.47; *Cuartel* IV—4.52; and the ranchos—4.88 persons per family. In 1940, families ranged in size from 1 person to 11 persons, with a median of 4, a mode of 5, and a mean of 4.47. Nearly the same conditions obtained in 1945 excepting that the modal size was 2 and the mean was 4.46.

TABLE 10.—*Households in Quiroga, 1940 and 1945* [1]

Year	Cuartel I			Cuartel II			Cuartel III		
	H	F	P	H	F	P	H	F	P
1940	140	157	701	163	200	857	144	186	794
1945	166	189	800	163	183	780	163	200	894

Year	Cuartel IV			Ranchos			Total	
	H	F	P	H	F	P	H	F
1940	123	143	657	[2](185)	185	890	755	871
1945	137	152	687	168	207	993	797	931

[1] H represents the number of households or occupied houses or census units; F, the number of families; and P, the number of persons.

[2] Assumedly the same number of households as family groups.

Another picture of the family in Quiroga can be obtained from the 1940 census statistics which show, for every woman who had been married, age at time of first marriage, total number of children born alive, and number of children still alive at the time of the census. A total of 830 women had been married at some time in their lives. Of this number we had no data on 4; 28 had had no children but had been married less than 3 years; 59 had been married for more than 3 years but had had no children and consequently were considered barren or sterile; and the remaining 739 women had given birth to one or more live children. Subtracting the 4 with no data and the 28 married less than 3 years from the total number of married women, we obtain the number of 788 women married 3 years or longer for whom we possess data. The 59 barren women constitute an exceedingly small 7.3 percent of this number. In other words, only 7 out of every 100 married women do not bear children, for some reason. Considering the cases of early widowhood and the theoretical probability that at least half of the husbands of barren women are impotent, we can conclude that probably fewer than 3 percent of the women in the Quiroga area are sterile. This is in line with the traditional fertility of Indian and mestizo women in Latin America as a whole. The fertility of married women in the divisions of Quiroga is shown in table 11.

Apparently life in the ranchos tends to reduce the factors which cause sterility. We are assuming that in a Roman Catholic and unsophisticated community there is very little use of contraceptives. We have heard that there is some use of herbs which are supposed to thwart conception, but presumably (according to hearsay) their use is restricted to older women who have borne a number of children and to a few unmarried girls.

TABLE 11.—*Fertility of married women in Quiroga*

Division	Married women	Barren	Recently married	No data	Mothers
Cuartel I	150	14	8	0	128
Cuartel II	184	17	4	0	163
Cuartel III	183	12	9	2	160
Cuartel IV	136	15	2	0	119
Ranchos	177	1	5	2	169
Total	830	59	28	4	739

The age of women at the time of first marriage or union ranged from 12 to 50, with 18 years being both the median and the modal age. Approxi-

mately half of the women married between the ages of 15 and 18 inclusively, and about three-quarters (607) married at ages from 14 to 21. The cases of early marriage were 1 at 12, 5 at 13, 47 at 14, and 67 at 15 years. There were only 19 marriages at 35 or older. As has been pointed out in connection with the age of the population, most exact ages cannot be accepted at face value, but the figures given above certainly represent the trends that obtain in Quiroga.

The 739 mothers had a total of 3,824 children. This was an average of 5.17 children per mother. The range in number of children per mother was from 1 to 17, with 3 being the modal number, and the median falling exactly between 4 and 5 children per mother. The average per mother ranged from a low of 3.87 in the ranchos, through 5.01 in *cuartel* I, 5.15 in *cuartel* III, and 5.69 in *cuartel* II, to 6.36 in *cuartel* IV. It is interesting that the division with the fewest mothers had the highest average, and the division with the most mothers had the lowest average.

Mortality among the children born to Quiroga mothers was very high, amounting to 36.4 percent. This and the succeeding data are based on information from the town of Quiroga alone, since the census taker in the ranchos evidently made a mistake and submitted returns that would indicate that no children ever died in the ranchos, which is quite contrary to fact. This mortality is not quite that of children alone, since the data merely indicate offspring who died before the mother. There were 51 mothers who were 60 years or older, and it is expectable that some of their grown children would die. However, these 51 old mothers did not have enough mortality among their offspring to materially affect our percentages. We selected the age of 60 as a critical one for comment because the offspring of mothers of this age would be 45 years old or younger, and in Mexico (as of tables of 1930) if a child reaches the age of 2 he can expect to live to the age of 46, and if he is still alive at the age of 6 he can expect to live to the age of 53; at 10 the expectancy is to live to 54, and at 12 the expectancy is to live to 55 years of age. Of the mothers, 355 lost children, which is an average of 3.25 per mother. In other words, 62.28 percent of the mothers in Quiroga town lost one or more children. The total number of offspring who died was 1,155, and the range was from 1 to 15 deaths per mother. The modal number of deaths was one, and the median was four deaths. The average of children's deaths per mother was lowest in *cuartel* I (2.5), and was highest in *cuartel* IV (3.84). There is a definite correlation between larger families and more deaths.

Utilizing all possible data in the 1940 census we were able to come to some tentative conclusions concerning lapse between marriage and the bearing of the first child, and concerning the duration of the bearing period. There were data on lapse for approximately half (410) of the women. Approximately 71 percent (291) bore their first child within the first year after marriage, and 90 percent had their first child within the first 3 years of marriage. A few individuals (19) had their first child after 6 years or longer of marriage—the extreme case was in the 17th year. The most common spacing of children is at approximately 2-year intervals, and next in frequency are 1- and 3-year intervals. The bearing age ranged from 15 to 52, but more than one-half of the children were borne by women 30 or younger, and three-fourths were borne by women under 36 years of age. Approximately 10 percent of the children were borne by women who were 40 or older. The highest bearing period seems to be from 18 to 35. Correlative material was derived from the 1945 list of births in Quiroga. Of the 226 couples who had children in that year, the range in age of the husbands was 19 to 62 with a median of 32, and the range in age of the wives was 16 to 45 with a median of 26. The women under 36 bore 90 percent of the babies born in 1945. An interesting study was afforded by the age differences in these 226 couples. Six of the couples were of the same age; in 12 couples the age of one or the other partner was unknown; in 18 couples the woman was older than the man; and in the remaining 190 cases the man was the older. The older men ranged from one to 37 years older than their spouses, with a median of 5 years and a mean of 6.3 years difference.

DEATHS

RECORDED DEATHS IN MUNICIPALITY OF QUIROGA

The *Actas de Defunción* or death records are among the most complete and informative of the records in the office of civil registry. Among the items of information given on the form in use at present are: Name, age, nationality, civil status,

TABLE 12.—*Recorded deaths in the municipality of Quiroga*

Year	Total deaths in municipality	Deaths in Quiroga and its ranchos	Comments
1860	167	125	First year of record.
1861	236	164	
1862	240	142	
1863	192	117	
1864	144	127	Record incomplete.
1865			No record.
1866			Do.
1867	307	146	
1868	188	125	
1869			No record until 1873.
1873	444	219	
1874	271	155	Tzintzuntzan records included until 1930.
1875	276	129	
1876	321	166	
1877	437	197	
1878	533	222	
1879	531	247	
1880	330	171	
1881	435		Figure from Memorias.
1882	320	136	
1883	523	239	
1884	389	203	
1885	496	(?)	We did not analyze the records 1885–96.
1886	397		
1887	411		
1888	502		
1889	461		
1890	355		
1891	570		
1892	473		
1893	328		
1894	291		
1895	306		
1896	324		
1897	250	123	
1898	372	193	
1899	560	192	
1900	233	(?)	We did not analyze records 1900–1903.
1901	268		
1902	290		
1903	389		
1904	373	145	
1905	380	147	
1906	507	154	
1907	528	174	
1908	430	168	
1909	361	148	
1910	596	221	
1911	477	(?)	Record incomplete. We did not analyze records 1911–36.
1912	388		
1913	302		
1914	432		
1915	600		
1916	480		
1917	424		
1918			No record.
1919			Do.
1920	88		Period of anarchy. Records apparently complete, but only superficially so. Low point in population of Quiroga.
1921	90		
1922	177		
1923	179		
1924	347		
1925	345		
1926	323		
1927	263		
1928	201		
1929	469		
1930	276		Tzintzuntzan removed from the municipality of Quiroga.
1931	229		
1932	274		
1933	309		
1934	184		
1935	181		
1936	226		
1937	199	113	Began analysis of modern conditions.
1938	186	85	
1939	153	96	
1940	149	103	
1941	136	79	
1942	113	80	
1943	121	73	
1944	125	92	
1945	139	85	

occupation, birthplace, place of residence, and parents of the deceased; death certificate (if presented), cause of death, name of the physician who signed the certificate; name of the person representing the deceased, his age, occupation, home address, and nationality; names of two witnesses, with their age, occupation, home address, relationship to the deceased, and nationality; signatures of the representative and the two witnesses; and at the margin, indication of the type or class of burial, receipt number, municipal treasurer's seal and signature, and fingerprint of the representative of the deceased. Because no one may be buried in the cemetery (which belongs to the municipality) unless the death is registered and fees have been paid, the record of deaths is the most complete of all forms of vital statistics for the period since 1860. Probably only a few stillbirths and young infants are not recorded.

Among the more important facts that can be derived from the records are fluctuations in the mortality rate, incidence of epidemic years, age-sex-cause of death relationships, relative importance of various diseases, and season and months of greatest mortality. By comparing the figures in table 12 with the population figures for the municipality and for Quiroga and its ranchos (pp. 62–64), one can get a rough impression of fluctuations in the mortality rate.

MORTALITY RATES

Probably the outstanding conclusion derived from table 12 is that from the beginning of records in 1860 until 1936 there were numerous and rapid changes in the number of deaths which cannot be explained by population changes. These variations were due to the frequent incidence of such diseases as smallpox, measles, whooping cough, typhoid and paratyphoid fevers, typhus, and scarlet fever, which would kill or immunize for a season and then remain relatively dormant until another crop of susceptible children had developed. Since 1936 the mortality rate has remained fairly fixed and comparatively low, probably because Quiroga has had doctors in residence since that date. During the 9 years of our most recent record (1937–45) we will assume that Quiroga and its ranchos had an average population of about 4,000. During this period there were 806 deaths, or an average of about 90 a year. This would yield a death rate of 22.5 per thousand inhabitants, which can be compared with the rate of 22.4 for Michoacán and 23.2 for all Mexico in 1940. In 1943 the rate for Mexico was 21.5 per

thousand. Apparently, Quiroga is a typical community insofar as death rate is concerned.

CAUSES OF DEATH

During the entire colonial period we have no specific mention of mortality in Quiroga. However, the fact that Quiroga was involved in at least two congregations (ca. 1534 and 1603), and its location in the Pátzcuaro Basin, would justify the conclusion that the various pests, plagues, and epidemic diseases mentioned by the chroniclers for Michoacán played their part in Quiroga. The Mexicano terms *cocoliztle* and *matlazahuatl* apparently were used by the chroniclers for lethal epidemics in general and for certain specific diseases, such as smallpox, typhus, typhoid, and possibly yellow fever and cholera. Under the above Mexicano terms, the Tarascan *teresequa* (an "issue of putrid blood"), and the general terms *peste* (pest), *plaga* (plague), and *enfermidad general* (epidemic), Michoacán was scourged on many occasions during the colonial period. Especially severe were the plagues of 1536–37, 1544–46, 1554–55, 1563–64, 1576–78, 1588, 1643, 1735–37, 1749–50, 1761–62, 1779, and 1813–14. The Pátzcuaro Basin suffered most in 1545 (smallpox and possibly an unknown disease, which were credited with killing one-half to five-sixths of the population of Michoacán), 1563–64 (measles and another disease), 1576–77, and 1643. Smallpox, by itself or in conjunction with unidentified diseases, ravaged periodically from 1520 into this century. The worst smallpox epidemics were in 1520–21, 1532, 1538, 1545, 1559, 1576, 1579, 1592, and thereafter about every "12 or 18 years." Measles was a lethal epidemic during most of the colonial period and into the present century. The worst measles epidemics in Michoacán were in 1563, 1595, and 1821. Also operating were famine years produced by crop failures, especially in 1692–96, 1749–50, and 1783–86. Although introduced diseases and famine took the greatest toll, there was an increase in mortality due to Spanish-introduced changes in clothing, diet, and working conditions. During the colonial centuries a certain amount of immunity became established in the population, but smallpox continued to ravage even though vaccination was introduced into Michoacán as early as 1829, and inoculation had been attempted toward the end of the eighteenth century.

The history of diseases in Michoacán from 1821 into the 1860's is quite incomplete. However, notable years and epidemics were: 1833–36 (especially 1836) and 1850–54 (especially 1850) for cholera; 1839–40, 1858, and 1869–70, smallpox; 1836–40 scarlet fever; 1860 typhus and possibly yellow fever; 1862 and 1865 typhoid; and typhus again in 1863 and 1869. Civil wars and the movement of troops during the French Intervention undoubtedly made the 1830's, 1850's, and 1860's especially bad.

For the period of record, 1860 to date, we made a sampling of the years 1860–64, 1867–68, 1873–80, 1882–84, 1897–99, 1904–10, and 1937–45. No causes of death were indicated for the years 1860–62, and only a few (35 out of 515 deaths) in the years 1863–64 and 1867–68. Some time between 1869 and 1873 began the indication of causes for practically all deaths, since such data are available for 1873 and thereafter. However, very few deaths were accompanied by a physician's certificate of cause of death until after 1936, although medical terminology begins to appear in the records as early as 1878. From 1878 until about 1914 Quiroga had from one to three resident doctors, and their fine hand can be seen in the introduction of such terms as *tos ferina* (whooping cough) instead of simple *tos* in 1878, peritonitis and enterocolitis introduced in 1883, anemia cerebral and uretovaginitis introduced in 1884, and others in increasing numbers in later years. From some time during the revolution (ca. 1915) until 1936 there were no resident doctors in Quiroga, excepting two in 1925–27, and an occasional pharmacist *sin título* (unlicensed or without diploma) who would sell patent medicines and other drugs and provide "practical" information and suggestions. Consequently most of the causes of death entered from 1873 until 1937 represent the terminology and knowledge of folk or home medicine. A few causes of death can be accepted without question, such as *viruelas* (smallpox), *sarampión* (measles), and the various forms of violent death (knife wounds, bullet, lightning, etc.). A larger number of deaths can be placed in fairly certain groups; e. g., *fiebre* or fever most commonly was typhoid or paratyphoid fever or typhus, *calenturas* and *fríos* and intermittent fevers usually were forms of malaria, *etica* or *ectica* and *tisis* or *ticis* were respectively infantile and adult tuberculosis, *bilis* or *vilis* was an infec-

TABLE 13.—*Chief causes of death from 1873 to 1910, Quiroga*

Year	Total deaths	First		Second		Third		Fourth		Fifth [1]	
		Disease	Number of deaths	Disease	Number of deaths	Disease	Number of deaths	Disease	Number of deaths	Disease	Number of deaths
1873	219	Smallpox	86	Dysentery	30	Diarrhea	22	Pneumonia	6	Unknown	16
1874	155	Dysentery	17	Diarrhea	14	*Dolor costado*	13	Violent	13	do	19
1875	129	do	22	do	15	Pneumonia	10	do	7	do	9
1876	166	do	47	Fever	17	Dropsy	10	*Tos*	8	do	15
1877	197	Smallpox	36	do	22	Dysentery	20	Pneumonia	10	do	23
1878	222	Dysentery	59	Smallpox	28	Pneumonia	18	*Dolor costado*	11	do	20
1879	247	do	60	Fever	45	do	25	Measles	19	do	15
1880	171	do	41	do	28	do	16	Whooping cough.	16	do	10
1882	136	Pneumonia	22	Dysentery	19	Smallpox	13	Fever	7	Dropsy	6
1883	239	Smallpox	91	do	30	Pneumonia	30	*Bilis*	8	Unknown	11
1884	203	Diarrhea	28	Smallpox	20	Dysentery	20	Whooping cough.	15	Pneumonia	15
1897	123	Enteritis	29	At birth	18	Pneumonia	9	Anemia	7	Senility	6
1898	193	Smallpox	61	Enteritis	27	do	18	At birth	14	do	8
1899	192	do	25	do	23	At birth	16	Enterocolitis	13	Measles	9
1904	145	Enteritis	20	Enterocolitis	17	Pneumonia	14	Gastroenteritis	12	At birth	10
1905	147	do	28	do	20	Gastroenteritis	16	Smallpox	7	Unknown	6
1906	154	Smallpox	18	Gastroenteritis	18	Enterocolitis	10	Whooping cough.	8	Pneumonia	7
1907	174	Pneumonia	24	Enteritis	21	do	17	Gastroenteritis	8	Diarrhea	8
1908	168	Enteritis	20	Pneumonia	15	Bronchitis	13	Enterocolitis	12	Tuberculosis	9
1909	148	Pneumonia	18	Enteritis	16	At birth	13	do	12	Gastroenteritis	11
1910	221	Smallpox	21	do	21	Pneumonia	19	Bronchitis	15	Scarlet fever	12

[1] The number of deaths from unknown causes is shown whenever it falls among the first 5.

tion of the liver, *angina* or sore throat was commonly either diphtheria or a streptococcus infection, *pulmonía* was some form of pneumonia, and *cólico, torzón, diarrea, disentería, tapiado, enteritis,* and *fiebre intestinal* represented various gastrointestinal diseases. A very large number of deaths, especially of babies, were attributed to such descriptive causes as *inflamación* (inflammation), *dolor* (pain), *debilidad congénita* (congenital debility) or *recién nacido* (just born)—often premature births or babies injured when removed by the midwife—and *falta de cuidado* (lack of care)—exposure to cold, lack of food, uncleanliness. Among adults there were numerous deaths attributed to *agotamiento* and *vejez* (senile debility or exhaustion), but undoubtedly in many of the younger adults this represented merely cachexia. Other general terms included *ataque* (attack or fit), *insulto* (sudden illness), *muerte repentina* (sudden death), and *hidropesía* (dropsy).

Because of variation in terminology and in the use of a physician's certificate we present the chief causes of death in the periods sampled in two tables (Nos. 13 and 15). Table 13 includes the years of least reliability. In the 21 years listed in table 13 there were 3,749 deaths. According to the terminology of entry the first 10 causes of death (which accounted for 55 percent of the total) were smallpox, dysentery, pneumonia, enteritis, premature birth or death at birth, fever, diarrhea, enterocolitis, whooping cough, and senility, in that order. However, if we analyze the returns and compare the figures for 1873–84 with those of 1897–1910 there are indicated many changes in terminology and a considerable refinement of diagnosis. This is especially true of the gastrointestinal and the respiratory diseases, which are two of the three most important groups. The changes in terminology are apparent in table 14. It is apparent that most of what had earlier been termed dysentery was not really amoebic or bacillary dysentery, and most of such cases (and those of diarrhea and colic also) were distributed among the enteritis diseases. Bronchitis and influenza apparently were separated from pneumonia in the later period, and better diagnosis added to the number of cases of tuberculosis (consumption of the lungs).

TABLE 14.—*Gastrointestinal and respiratory diseases causing death in 1873–84 and in 1897–1910*

Disease group and cause of death	Number of deaths		Total deaths
	1873–84	1897–1910	
Gastrointestinal disease:			
Dysentery	365	25	390
Enteritis	0	188	188
Diarrhea	95	26	121
Enterocolitis	0	112	112
Gastroenteritis	0	70	70
Colic	40	12	52
Total	500	433	933
Respiratory diseases:			
Pneumonia	177	135	312
Bronchitis	0	66	66
Tuberculosis	19	38	57
Influenza	0	4	4
Total	196	243	439

The ranking among the contagious diseases (other than those listed previously) was as follows: Smallpox, 413 cases; fevers, 195 (unspecified fever 154, typhus 30, typhoid 11); whooping cough, 112; malaria, 51; measles, 47; diphtheria, 23; and scarlet fever, 14. It will be noted that nearly every year with more than an average number of deaths (178.5) was a year in which smallpox and/or fever was in first or second place among the causes of death, as in 1873, 1877, 1878, 1879, 1883, 1884, 1898, 1899, and 1910. The 12- or 18-year cycle for smallpox reported from the colonial period shows up as a 10- or 15-year cycle (1873, 1883, 1898, ca. 1910) for peak years, with an incidence of more than 4 cases every 4 years (1873, 86 cases; 1877, 36 cases; 1878, 28 cases; 1882, 1883, 1884, with 13, 91, and 20 cases; 1898 and 1899, with 61 and 25 cases; 1905 and 1906, with 7 and 18 cases; and 1910 with 21 cases). Although many of the cases reported simply as fever were undoubtedly of a variety of diseases, probably the majority were typhoid, paratyphoid, and typhus, but especially typhoid. From 1873 onward there were a few typhus cases listed for nearly every year, the most being 6 cases in 1884, and 4 each in 1878 and 1879. However, State records show that 1876–77, 1879–81, and 1893 were typhus years; and our records show the greatest number of unidentified fever cases in 1876 (17 cases), 1877 (22), 1879 (45), and 1880 (28). The proportion of typhoid to typhus is uncertain, but the term "typhoid" does not appear in the records until the 1880's, and then the number in any 1 year does not go above 3. Undoubtedly there were many more cases of typhoid than appear in the records. State and local records stress 1879 and 1881 as typhoid years. A medical geography of Michoacan in 1884 lists the most deadly diseases in Quiroga as "catarrhal infections," smallpox, typhoid, and pneumonia. Whooping cough and diphtheria were consistently present, and whooping cough was at its worst in 1875–84 and 1906–07. Malaria (in various forms) was present in practically every year, but the toll was never higher than 8 in 1879 and 5 each in 1874, 1907, and 1910. More than half of the years had no deaths from measles, and only 1879 (19 cases), 1899 (9 cases), and 1910 (7 cases) could be considered as measles years. We cannot explain the apparent low incidence of scarlet fever, especially since 12 of the 14 cases were reported in 1910.

The remaining chief causes of death were: Violent death in all forms, 83 (knife wounds, 40; falls and blows, 18; bullet wounds, 8; drowning, 7; lightning, 6; suicide by hanging, 2; and burns, 2); old age or decrepitude, 73; dropsy, 65; *dolor de costado* or sideache (appendicitis in part), 45; liver ailments, 40; and death in childbirth, 37. It is of interest that 33 of the deaths from knifing occurred in the first 11 years of our record. The records of death from old age, dropsy, and sideache are practically valueless as far as specific diseases are concerned. We have not considered it worth while to discuss the practically anonymous deaths from pains, inflammation, attacks, headaches, and the like. A scattering of deaths occurred from such causes as asthma, acute drunkenness, afflictions of the heart and of the nervous system, venereal diseases, hemorrhages, apoplexy, hernia, tumor, cancer, hydrophobia, epilepsy, erysipelas or *mal de San Antonio*, gangrene, paralysis, rheumatism, and *lázaro* or leprosy. One person died of leprosy about every 5 or 6 years.

TABLE 15.—*Chief causes of death from 1937 to 1945, Quiroga*

Year	Total deaths	First		Second		Third		Fourth		Fifth	
		Cause of death	Number of deaths	Cause of death	Number of deaths	Cause of death	Number of deaths	Cause of death	Number of deaths	Cause of death	Number of deaths
1937	113	Diarrhea	26	Exhaustion	14	Bronchitis	8	Grippe	8	Colic	7
1938	85	do	17	Bronchitis	17	Gunshot	6	Pneumonia	4	Smallpox	4
1939	96	Gastroenteritis	22	Exhaustion	14	Pneumonia	8	Bronchitis	7	Gunshot	4
1940	103	Exhaustion	23	Gastroenteritis	16	Diarrhea	8	Pneumonia	8	[1]	4
1941	79	Gastroenteritis	9	Diarrhea	8	Exhaustion	7	Malaria	6	Bronchitis	5
1942	80	Bronchitis	12	do	11	Liver	8	do	6	[1]	4
1943	73	Diarrhea	15	Exhaustion	8	Vomit	7	Pneumonia	6	Measles	5
1944	92	do	17	do	15	Bronchitis	6	Fever	6	Vomit	5
1945	85	Exhaustion	17	Bronchitis	13	Pneumonia	7	Diarrhea	6	Gastroenteritis	6

[1] In 1940 and 1942 several diseases tied for fifth place, with 4 deaths each.

In the 9 years shown in table 15 there were 806 deaths in Quiroga and its ranchos. The absolute number of deaths and also the rate are about one-half of what obtained in the second half of the nineteenth century. The outstanding fact is the practical elimination of smallpox, owing primarily to the extensive governmental campaign of vaccination during the past 20 years. Also, deaths from pneumonia, fevers, and whooping cough, and infant deaths were materially reduced. Much of this probably represents the presence of at least one doctor in residence ever since 1936 when the Servicio Médico Ejidal was established in Quiroga under Dr. Carlos Ramírez Parraguirre 1936–39, and continued under Dr. Arturo H. Rascón 1939–41. Dr. Rascón returned in 1944 and took up private practice in Quiroga. About 1937 to 1940 a doctor of the Secretaría de Comunicaciones y Obras Públicas was in Quiroga while the main highway from Mexico City to Guadalajara was being improved in this area. Since 1941 usually there has been one doctor of the Servicio Médico Social resident in Quiroga. Although there is no local hospital, the present improved communications make it a simple matter to get to hospitals in Morelia, and there are two drug stores in Quiroga. Although a reduction in mortality has been coincident with the presence of physicians, it is not certain that the diagnosis of causes of deaths has improved materially. Only about 60 percent of the death records are accompanied by a physician's certificate. This is because most of the people in the ranchos and many of the poorer people in town do not have a doctor in case of illness, and this is especially true in the case of sick babies and old people. Furthermore, entirely too many deaths are attributed to *agotamiento* or exhaustion, including those of babies, middle-aged, and old people. Also, there are still entered such noncommittal causes as fever and *vómito* or vomit (especially for babies).

In 1937–45 (see table 15) the first 10 causes of death (which comprise 68.7 percent of the total) are: Diarrhea, 110; exhaustion, 103; bronchitis, 76; gastroenteritis, 59; violent deaths, 49; pneumonia, 47; liver disorders, 42; heart diseases, 23; "vomit," 23; and malaria, 22. The next group of 10 includes: Grippe, 18; enteritis, 18; colic, 16; measles, 16; fever, 15; whooping cough, 14; premature births and stillborns, 9; enterocolitis, 9; cerebral hemorrhage, 9; and several diseases with eight cases each, such as childbirth, dysentery, and tumors. The chief groupings are: Gastrointestinal diseases, 220; respiratory, 145; debility-anemia, 116; contagious diseases, 80; violent deaths, 49; diseases of the liver, 42; uncertain causes, 31; and heart diseases, 23. It will be noted that in the medical terminology diarrhea has gained at the expense of dysentery, gastroenteritis is favored over enteritis and entrocolitis, and that bronchitis has replaced pneumonia, and grippe is used instead of influenza. Much of this was caused by changes in certificate regulations about 1926.

For purposes of comparison we have regrouped the causes of death according to the plan followed by the Mexican Government in vital statistics. However, the large and practically anonymous group of deaths listed in Quiroga under such headings as exhaustion, general exhaustion, senile exhaustion, anemia, premature birth, congenital debility, asphyxia, pain, fever, and vomit (and also those with no cause of death indicated) we have arbitrarily divided on the basis of age. The infantile group includes all deaths from the above "causes" in children under 2 years of age. The general ill-health or cachexia group includes individuals from 2 years of age (actually beginning about 5) to 49, and the senile debility group has been restricted to individuals of 50 or more years of age (although one babe of 1 month and several individuals under 20 years were listed as dying of senile exhaustion!). It has been assumed that the average population of Quiroga and its ranchos was 4,000 for the period 1937–45. The total number of deaths from a specified cause has been divided by 9 to obtain the average number per year, and this figure has been divided by 4 to obtain the rate of death per 1,000 of population (table 16). Comparisons in rank and rate for Michoacán and Mexico as a whole are given for the specified years (table 16).

It is evident that due to distribution of Quiroga deaths among senile exhaustion, infantile deaths, and cachexia, not all of the rates are strictly comparable. However, such causes as violent deaths, malaria, measles, whooping cough, typhoid, tuberculosis, smallpox, and alcoholism can be compared. There seems to be a trend in Quiroga to diagnose as bronchitis rather than pneumonia, to stress enteritis at the expense of

TABLE 16.—*Comparison of deaths in Quiroga with those in Michoacán and in Mexico*

Cause of death	Rank and rate of deaths per year [1]										
	Quiroga		Michoacán, 1933–39		Mexico, 1938		Mexico, 1937		Mexico, 1931	Mexico, 1922	
	Rank	Rate [2]	Rank	Rate	Rank	Rate	Rate	Rate	Rank	Rank	Rate
Diarrhea and enteritis	1	5.89	1	4.92	1	4.25	1	4.38	1	2	1.78
Senile exhaustion		2.94									
Bronchitis	2	2.14	5	.90	7	.58	7	.65	10	8	.60
Infantile miscellaneous		1.52									
Pneumonia	3	1.36	2	2.52	2	3.20	2	3.55	2	1	2.34
Violent deaths	4	1.36	4	1.47	4	1.07	4	1.03	4	7	.64
Liver ailments	5	1.17	3	1.53	17	.20	16	.23	18	19	.11
Cachexia		1.06									
Heart diseases	6	.64	(*)		10	.45	11	.49	11	12	.23
Malaria	7	.61	6	.82	3	1.27	3	1.35	3	3	1.73
Influenza	8	.50	10	.35	16	.21	12	.45	13	10	.50
Measles	9	.44	7	.80	11	.45	6	.73	14	14	.15
Whooping cough	10	.39	9	.73	6	.78	8	.61	9	4	1.00
Cerebral hemorrhage, apoplexy, etc	11	.33	(*)		15	.22	17	.20	16	13	.20
Diseases of the nervous system	12	.25	(*)		5	.92	5	.78	5	(*)	(*)
Dysentery	13	.22	8	.76	9	.52	9	.56	7	9	.58
Childbirth	14	.22	(*)		(*)	(*)	(*)	(*)	(*)	(*)	(*)
Tumor	15	.22	(*)		(*)	(*)	(*)	(*)	(*)	(*)	(*)
Typhoid	16	.19	(*)		13	.28	15	.29	12	11	.33
Tuberculosis	17	.17	(*)		8	.55	10	.79	8	6	.79
Nephritis	18	.14	(*)		14	.27	14	.31	17	17	.12
Smallpox	19	.14	(*)		20	.17	20	.18	6	5	.83
Alcoholism	20	.14	(*)		27	.07	26	.08	26	(*)	(*)

[1] The asterisk indicates that the disease was not among the top 10 for Michoacán, top 31 for Mexico in 1938, 1937, and 1931, or top 24 for Mexico in 1922.
[2] Average number of deaths per year per 1,000 population for Quiroga in 1937–45.

dysentery, and to overlook many cases of tuberculosis, diseases of the nervous system, and possibly typhoid. It is noteworthy that Quiroga has comparatively high rates of death from diarrhea and enteritis, bronchitis, violence, liver ailments, heart diseases, cerebral hemorrhage, childbirth, tumor, and alcoholism. During the 9 years of recent record there were no deaths by suicide, or from leprosy, hydrophobia, paralysis, or scarlet fever; and there were but one death from epilepsy, one from tonsillitis, two each from diabetes, syphilis, erysipelas, and diphtheria, and three each from cancer and typhus. We can conclude that probably the majority of deaths are caused by lack of care of infants and by various water-borne infections. Although violent deaths have maintained a rather constant position in Quiroga, guns have tended to replace knives in the settlement of disputes (21 bullet versus 8 knife wounds), and motor accidents have assumed more importance. Most of the deaths from automobiles are caused by being hit by a car. We understand that during the late 1920's and the 1930's, when automobile and bus traffic began to assume importance, many pedestrians were killed. This was because the local inhabitants were not accustomed to the speed of automobiles, and also because they at first used the middle of the roads whether they were proceeding on foot or on a beast.

SEASONS OF DEATH

We sampled 32 years (distributed from 1860 to 1945) to determine the variations in month and season of death. There were a total of 4,689 deaths which occurred as follows: July, 619; June, 543; August, 447; May, 443; April, 394; September, 373; November, 345; March, 326; October, 324; February, 299; December, 288; and January, 288. July was the most mortal month 11 times, was in second place 9 times, in third place 6 times, in fourth place 4 times, and never was in last position (twelfth). June led 11 times, was second 3 times, was third 6 times, was in fourth place 3 times, and was in last place once. August was in first place 3 times, was second 5 times, in third 2 times, in fourth place 5 times, and was in twelfth place once. May was in first place 3 times, in second 5 times, in third 7 times, in fourth 3 times, and was last twice. January had the fewest deaths on 8 occasions; December, 4 times; February, 8 times; October, 5 times; March, 3 times; November, 3 times; and September, 5 times. The rankings do not add up to 32 because on a number of occasions 2 or 3 months would have the same number of deaths and would be given the same rank. For Mexico as a whole, August is the most deadly month, and in Michoacán as a whole, the order is July, August, and April (averaged for 1933–39 only). The years with compara-

tively few deaths tend to have the greatest departure from the norms in the monthly distribution of deaths. This would indicate that the seasonal incidence of the more lethal diseases determines the norms of distribution. The mortalities can be distributed along a fairly smooth curve which begins with December, January, and February (the season with fewest deaths), swings up slightly in March and yet more in April, runs strongly upward through May and June to a climax in July, falls off somewhat in August and September, and continues downward in October, although there is a slight upward movement in November before completing the cycle into December.

The gastrointestinal diseases (including dysentery) are most common from April to August, with a peak in June-July and a minor peak in November. Typhoid and paratyphoid fevers are most prevalent in July, August, and September. The explanation of this coincidence with the summer period is that the heavy rains commonly begin toward the end of June, and for 2 or 3 months the sources of potable water are strongly polluted. As the filth that has accumulated during the dry season is leached out and evacuated from the soils the waters in the springs, wells, and streams become cleaner and the incidence of water-borne infections decreases. Diseases of the respiratory tract are most manifest during the relatively cool and dry season, or winter, from November to May, with a peak in April. Although modern incidence of smallpox, whooping cough, and typhus, tends to be low and scattered, the records over the longer period show the strongest concentrations of deaths from these diseases in the November to May period. Malarial deaths are most common December to June. It formerly was assumed that after the winter and spring attacks of smallpox would come the scourge of measles, and there is still a tendency toward concentration of measles between April and September. Perhaps because of the general debilitating effect of the water-borne infections more than half of other deaths (such as senile exhaustion, cachexia, and deaths of unknown cause) occur in the May to August period.

AGE AND DEATH

Throughout the medical history of Mexico and of Michoacán the infant (less than 1 year of age) mortality has been exceedingly high. This condition obtains in Quiroga, where usually at least one-third of the deaths in any year are of infants under 1 year of age, and where in more than half of the years children under 4 constitute more than half of the deaths. Some changes in age distribution of deaths are indicated by table 17, which shows the raw figures for the 1867–77 and 1937–45 periods.

TABLE 17.—*Deaths by age groups for 1867–77 and 1937–45*

Year	Total deaths		Deaths in age group—									
			0–12 mos.		13 mos.–3 yrs.		4–7 yrs.		8–14 yrs.		Total (0–14 yrs.)	
	No.	*Pct.*	*No.*	*Pct.*	*No.*	*Pct.*	*No.*	*Pct.*	*No.*	*Pct.*	*No.*	*Pct.*
1867	146		56		37		17		4		114	
1868	125		29		23		10		1		63	
1873	219		47		67		29		8		151	
1874	155		55		16		8		5		84	
1875	129		38		24		13		2		77	
1876	166		51		36		7		3		97	
1877	197		54		39		20		15		128	
Percent		100		29. 02		21. 28		9. 14		3. 34		62. 78
1937	113		37		22		6		4		69	
1938	85		31		8		6		1		46	
1939	96		30		7		4		3		44	
1940	103		26		7		6		7		46	
1941	79		23		5		2		4		34	
1942	80		32		8		8		8		56	
1943	73		24		11		5		1		41	
1544	92		34		2		7		1		44	
1945	85		32		6		5		4		47	
Percent		100		33. 37		9. 42		6. 07		4. 09		52. 97

The principal change between the 1860–70's and the 1930–40's has been a lowering of the proportion of children's deaths (from 62.78 percent to 52.97 percent), which has been accomplished chiefly in the 13-month to 3-year group since the proportion of infant deaths has increased. Our data conform fairly closely with the national percentage of 47.4 and that for Michoacán of 46.7 (computed for 1937–39) comprising children under 5 years of age. For the period 1940–45 there were 150 infant deaths per thousand infants less than 1 year of age, which can be compared with the Mexican rate of 116.6 in 1943. It is evident that the critical period is from birth until the fourth year of age. Other than those who die at birth or without diagnosis, the majority of children under 15 in Quiroga die from diarrhea and enteritis, bronchitis and pneumonia, influenza, measles, whooping cough, and dysentery—in that order. Probably the diseases of the digestive and respiratory organs account for more than half of the deaths of children. In recent years smallpox,

diphtheria, scarlet fever, and meningitis have not been important causes of death. More than 80 percent of those who die of whooping cough, measles, dipththeria, "vomit" and smallpox are under 15 years of age. Considering the entire population, we can generalize that in years with a comparatively low number of deaths there is a more even distribution of deaths among the various age groups—always excepting the infants under 1 year. Approximately 3 percent of the deaths are in the 15 to 19 age group, 14 percent in the 20 to 39, 11 percent in the 40 to 59, and 19 percent in the 60 or older age group.

SEX AND DEATH

We did not analyze the age-sex-cause of death relationship very thoroughly. However, it is quite apparent that the mortality is greater both absolutely and proportionately among males than females from birth until at least the age of 19. Probably the females maintain an advantage for 10 or 15 more years, since deaths in childbirth are far offset by violent deaths among males. Among the children under 15 we did not find any cause of death in which there were proportionately more females than males. Among adults there appeared to be a slight preponderance of female deaths from such causes as tumor, cancer, rheumatism, and senile exhaustion.

NATURAL INCREASE IN POPULATION

From 1940 to 1945 inclusive, there were 1,139 births and 512 deaths in Quiroga and its ranchos. This represents a net increase of 627 individuals, which yields a rate of about 26.1 per thousand inhabitants per year. This can be compared with the national average of 20.4 and the average for Michoacán of 22.3 (computed for the period 1936–40). In other words, Quiroga has an annual rate of increase of about 2.6 percent. However, it must be kept in mind that this is the natural rate of increase, and no allowances have been made for migration into and out from Quiroga. Actually, between the March 6, 1940, census and our census (which can be considered as of June 30, 1945) there were 945 births and 449 deaths, for a net gain of 496. Nevertheless, the gain indicated between the two censuses was only 260, which would indicate that 236 were away temporarily (*braceros* et al.) or had moved permanently.

ORIGINS OF THE POPULATION

The population of Quiroga and its ranchos is predominantly of local origin. From a study of the civil and parish records (where place of birth is given with nearly every inscription) it would be possible to make an exact study of the origins of the population for the past 150 years, but we contented ourselves with the returns of the 1940 census and of our census of 1945. The Federal census of 1940 gives only the State or country of birth and the nationality. In 1945 we obtained not only State or country of birth, but also birthplace within Michoacán. The results are given in tables 18 and 19.

TABLE 18.—*Origins of inhabitants of Quiroga, according to 1940 and 1945 censuses*

Subdivision	Total population		Number of inhabitants born in Michoacán		Number of inhabitants born in other entities					
					1940			1945		
	1940	1945	1940	1945	Total	Entity	Number per entity	Total	Entity	Number per entity
Cuartel I	701	800	694	779	7	Guato.	3	21	Guato.	10
						Jal.	2		Jal.	4
						Col.	1		D. F.	2
						Gro.	1		Chih.	2
									Gro.	1
									Pbla.	1
									Tam.	1
Cuartel II	857	780	856	766	1	Jal.	1	14	Guato.	4
									D. F.	4
									Jal.	2
									Pbla.	2
									Coah.	1
									Calif.	1
Cuartel III	794	894	782	881	12	Jal.	6	13	Guato.	5
						D. F.	2		Jal.	2
						Aguas.	1		Aguas.	2
						Guato.	1		D. F.	1
						Tam.	1		Mex.	1
						Italy	1		Quer.	1
									VC.	1
Cuartel IV	657	687	657	680	0	----------	0	7	D. F.	3
									Jal.	3
									Guato.	1
Ranchos	890	998	890	997	0	----------	0	1	Mex.	1
Total	3,899	4,159	3,879	4,103	20	Jal.	9	56	Guato.	20
						Guato.	4		Jal.	11
						D. F.	2		D. F.	10
						Aguas.	1		Pbla.	3
						Col.	1		Chih.	2
						Gro.	1		Aguas.	2
						Tam.	1		Mex.	2
						Italy	1		Coah.	1
									Gro.	1
									Quer.	1
									Tam.	1
									VC.	1
									U. S. A.	1

At first glance it would appear that the number of out-of-state residents had almost trebled between 1940 and 1945. We have reason to believe that the 1940 census takers overlooked a number,

so that the increase is only in the nature of doubling. With the exception of individuals born in the neighboring States of Guanajuato and Jalisco, the majority of out-of-state residents are governmental employees (teachers and physicians, chiefly) or tradesmen and artisans (such as photographer, pharmacist, tailor, mechanic, and the like). These individuals have been attracted to or sent to Quiroga because of the improvement in communications and business since 1939, and because of continued Federal participation in education, socialized medicine, and highway improvement. In 1940 there was just one person not a Mexican citizen (a man born in Italy). In 1945 there was one woman born in Corcoran, Calif., but she was of Mexican extraction and is a Mexican citizen. Consequently, there are no foreigners in Quiroga. By way of comparison, in 1900 there were no foreigners in the municipality of Quiroga; there were 29 individuals born in other States (Guanajuato led, with 10); and only 13 out of the 12,344 inhabitants had been residents of the municipality less than 1 year. It is noteworthy that the ranchos had no non-Michoacán residents in 1940, and but 1 in 1945.

Table 19 is more informative; it shows the birthplace of all the inhabitants who live in a community other than that in which they were born. Out of a total population of 4,159 there were 816 who were in this category. However, all but 56 of these were born within Michoacán. Of the 760 born in Michoacán, 582 were born outside of the municipality of Quiroga. The major portion, or 447, were born in adjacent municipalities, which would mean within a radius of 30 miles. The municipalities which contributed most importantly to the population of Quiroga and its ranchos were: Tzintzuntzan 176, Morelia 171, Pátzcuaro 48, Zacapu 18, Chucándiro 17, Villa Jiménez 16, Erongarícuaro 14, Puruándiro 12, Coeneo 11, Acuitzio 10, Tingambato 10, Huaniqueo 9, and Arteaga 9. Of the 102 municipalities in Michoacán 34 were represented in the Quiroga population. The individuals who were born at a distance greater than 15 miles usually fell into one of four categories: Religious (priest, sacristan, and the Sisters in the religious school), State governmental employees, merchants and skilled artisans, or spouses (usually wives). Most of the movement within the municipality of Quiroga, and from Morelia and Tzintzuntzan, comprised laborers and tenant farmers. Within this group there was considerable shifting around within the area, and it was not uncommon for a family to be composed of a couple native to the town of Quiroga or one of its ranchos whose children would be born each in a different community. Within our area of study in the municipality of Quiroga, only four individuals were born in the dependent pueblos. This is a striking commentary on the slight connection with the western pueblos as compared with the ranchos and pueblos to the north, east, and south, including a number in Morelia and Tzintzuntzan. The ranchos of Quiroga have the largest absolute and relative native populations. There were 21 individuals involved in movements from one rancho to another (Zirandangacho with none had the least and La Tirímicua with 8 had the most of this interchange). Quiroga town contributed 18 persons ranging from none to Atzimbo

TABLE 19.—*Birthplaces of inhabitants of Quiroga living in a community other than that in which they were born*

Subdivision of Quiroga	Number of inhabitants born in places indicated																				Total migrants
	Municipality of Quiroga									Adjacent municipalities							Other places				
	Atzimbo	Carfngaro	Icuácato	Sanambo	La Tirímicua	Zirandangacho	San Andrés	Santa Fe	Quiroga	Morelia	Tzintzuntzan	Pátzcuaro	Erongarícuaro	Zacapu	Coeneo	Huaniqueo	Remainder of Michoacán	Other States of Mexico	United States	
Cuartel I	4	1	1	5	2	0	1	1	------	32	43	15	13	4	5	0	30	21	0	178
Cuartel II	13	2	12	16	6	1	2	0	------	40	17	20	0	8	4	3	33	13	1	191
Cuartel III	5	0	8	4	16	0	0	0	------	43	23	5	0	6	2	4	19	13	0	148
Cuartel IV	13	8	0	15	2	1	0	0	------	35	56	7	1	0	0	2	49	7	0	196
Ranchos	1	4	6	5	5	0	0	0	18	21	37	1	0	0	0	0	4	1	0	103
Total	36	15	27	45	31	2	3	1	18	171	176	48	14	18	11	9	135	55	1	816

to 7 to Zirandangacho. The ranchos received 63 persons from outside the municipality, but most of these came from nearby ranchos; e.g., 10 from La Noria to Atzimbo less than a mile away, 9 from Cuenembo and Puerta de Cuenembo and 7 from Patambicho to Zirandangacho, etc. Sanambo is most strongly native with but 10 individuals out of a population of 299 who were not born in that rancho. Zirandangacho resembles a labor camp, since one-half of the population of 52 were born elsewhere.

In Quiroga town proper 713, or 22.44 percent, were born outside of the town. These figures are reduced to 574, or 18.15 percent, who were born outside of the municipality. *Cuartel* I, in the southwestern and most distant quarter of the town, had the fewest people from the ranchos (13), while *cuartel* II had the most (50) for no obvious reason. The largest rancho, Sanambo, contributed the most to Quiroga (40 persons); La Tirímicua, which has the closest economic and social connections with Quiroga, contributed the most proportionately (26 persons compared with a total population of 98); and the smallest rancho, Zirandangacho, provided but 2 persons. The largest number and proportion of outsiders are to be found in *cuartel* IV (196 persons, or 28.53 percent). This *cuartel* is the newest and poorest in Quiroga. During and since the revolution there has been a considerable immigration from the ranchos of Tzintzuntzan, especially Cuenembo (27), Patambicho (12), and El Tigre (9); and it is here that the migrants from the more distant parts of Michoacán tend to settle. There are less striking concentrations in the other quarters, although people from Morelia and Zacapu tend to settle in *cuarteles* II and III; and there is a certain concentration of people from Pátzcuaro, Coeneo, and outside of Michoacán in *cuarteles* I and II.

Some idea of the social and economic relationships between Quiroga and surrounding communities can be obtained from a listing of the communities which have contributed most importantly to the population of Quiroga and its ranchos. This listing is given in two categories (table 20): the first is of cities, towns, and villages including the persons born in dependent lesser communities in the immediate area; and the second is of the individual communities no matter what their size or status. The municipality is indicated in parentheses.

TABLE 20.—*Communities contributing most importantly to the population of Quiroga and its ranchos*

Major jurisdictions less than a municipality	Number of persons born	Individual settlements of all categories	Number of persons born
Tzintzuntzan (Tzint.)	176	Morelia (Morelia)	55
Teremendo (Morelia)	68	Cuenembo (Tzint.)	54
Morelia (Morelia)	55	El Tigre (Tzint.)	38
Capula (Morelia)	44	Pátzcuaro (Patz.)	36
Pátzcuaro (Patz.)	41	Patambicho (Tzint.)	27
Chucándiro (Chu.)	17	Santa Cruz (Tzint.)	24
V. Jiménez (V. J.)	16	Sajo Grande (Morelia)	23
Erongarícuaro (Ero.)	14	Iratzio (Morelia)	21
Puruándiro (Pur.)	11	Tzintzimacato and Tzintzimacato Chico (Morelia)	19
Ario de Ros. (Ario)	10	Capula (Morelia)	13
Coeneo (Coeneo)	10	Chucándiro (Chu.)	13
Zacapu (Zacapu)	10	Pta. de Cuenembo (Tzint.)	11
Huaniqueo (Huan.)	9	Carupo (Morelia)	11
Arteaga (Arteaga)	8	Puruándiro (Pur.)	11
		Ario de Ros. (Ario)	10
		El Correo (Morelia)	10
		La Noria (Tzint.)	10
		Zacapu (Zacapu)	10
		Huaniqueo (Huan.)	9
		V. Jiménez (V. J.)	9
		Tzintzuntzan (Tzint.)	9
		Arteaga (Arteaga)	8
		Opungio (Erong.)	8
		Coeneo (Coeneo)	7

The contributing communities fall into a number of groups, but all of the important sources are highland settlements of temperate to cool climate in the surrounding area, mestizo population, and a basic agricultural economy. They constitute a region of common economy, history, and customs, and consequently have introduced few new or extraneous elements into the culture of Quiroga. The most important group comprises the communities which formerly were within the municipality of Quiroga, but which at present are in Tzintzuntzan. Next is the group made up of communities along the main routes to the State and district capital of Morelia, such as El Correo, Iratzio, Capula, and Morelia, as well as El Tigre of Tzintzuntzan which lies athwart of a main highway. In third place are the communities along the old route northward from Lake Pátzcuaro to Lake Cuitzeo via Sajo, Tzintzimacato and Chucándiro. The fourth important grouping is of settlements along the road southward to the local metropolis and former capital of Pátzcuaro and onward into the hot lowlands via Santa Clara and Ario de Rosales. It is noteworthy that the highest and most Indian area (the Sierra Tarasca) to the west and south has made practically no contribution to the population of Quiroga.

LOCAL AND TEMPORARY MOVEMENTS OF POPULATION

Within the municipality there is a considerable movement of families from one quarter of Quiroga to another, and between town and the ranchos of La Tirímicua and Zirandangacho. In part this is an attempt to get closer to the place or area of employment or work; but more importantly it is a shifting from one rented house to another, which shifts are conditioned by availability and rental rates. According to the 1940 census 61 percent of the families lived in their own houses, but this does not provide a true picture of the condition in the town of Quiroga since nearly all of the rancho families (excepting in Zirandangacho) own their homes, while in Quiroga proper the percentage is reduced to 51. Although we did not keep a complete check on local movements while we were in Quiroga, it was our impression that about 10 percent of the families shifted quarters within town during the period January 1945 to February 1946.

Most of the traveling is restricted to a radius of some 30 miles, and is usually for one or another of four reasons: to buy or sell in the daily and weekly markets of nearby communities, to participate in religious or other festivals, to visit relatives or friends, or to obtain temporary employment. The people of the ranchos travel much less than do those in town. Longer and more frequent trips are made by a very small number of people comprising the traveling merchants, *arrieros*, and chauffeurs who frequently go as far as Jalisco, Guanajuato, Guerrero, and the Federal District. Unfortunately, we made no exact check of the number of individuals who had ever been as far as Guadalajara or Mexico City, or outside of Mexico. However, our notes indicate that a comparatively large number had been to Mexico City. Such travel has increased in recent years with the introduction of several busses which pass through Quiroga headed for Mexico City every day.

Because Michoacán traditionally has sent more workers to the United States than any other Mexican entity, we made a survey of those who had been in the United States or who were reported to be there. Since we did not talk with every male adult in Quiroga, although we interviewed some member of every family at least twice, our results probably are not quite complete. In 1945 there were 92 male residents of Quiroga (81 in town and 11 in the ranchos) who had been in the United States, and 18 (none from the ranchos) were reported to be there as *braceros*. This gives us a figure of 110 Quirogans who were or had been in the United States out of an adult (married or more than 20) male population of 1,000. It would be of interest to determine how this percentage of 11 would compare with those of other Mexican communities. Some of the Quiroga men had gone to the United States as early as 1904, but the majority had gone between 1915 and 1929, and more recently since 1942.

THE DISABLED AND DEFORMED

According to the 1940 census there were in Quiroga and its ranchos 23 individuals with specified defects which were distributed as follows: 8 cripples, 5 blind persons, 2 demented, 2 paralytics, 2 deaf, 1 deaf-mute, 1 mute, 1 humpback, and 1 person lacking 1 hand. Although we did not question for these items in our census, observation indicated that the numbers in the various categories ran about the same as in 1940. There may have been but 1 demented and 1 paralytic, and 2 individuals with humped backs. It is noteworthy that there was reported only one person with a defect (a crazy woman) from the ranchos, and but 3 (1 blind and 2 cripples) in the third *cuartel*. Although we noted a number of morons, there seemed to be no cretins or other types of idiots. The incidence of goiter, wens, and visible tumors was quite small. There was only 1 albino, and we saw no harelips. The most prevalent markings or disfigurations were from smallpox, although a number of the men carried visible scars from knife wounds.

Altogether, the population appealed to us as being able, well-informed, intelligent and clean. Such aspects of the population as race, language, religion, education, occupation, wealth, and habitation, are discussed elsewhere.

NAMES AND ETHNIC ORIGINS

The names of persons, both baptismal and surnames, are interesting in themselves and also often offer clues as to origins and other historical elements. By the time of the sixteenth century Spanish conquest and colonization of Mexico, family names or surnames (*nombres de familia, apellidos, sobrenombres*) were well established in the Iberian Peninsula, and essential stability had been attained in passing the patronymic from father to son and on to successive descendants. These trends were strengthened by the confirmation at the Council of Trent (1545–63) of the requirement that parish registers be kept in all churches.

From various lists of conquerors, *encomenderos*, citizens of Spanish settlements (*vecinos de villas y ciudades*), emigrants from Spain (*pasajeros a Indias*), *corregidores*, missionary and regular clergy, etc., we can obtain a fairly good idea of the family names involved and of the parts of the peninsula whence they came. Unfortunately, so far no one has made an intensive study of European surnames in Mexico, such as Thayer Ojeda (1917, 1919) has done for Chile. In the absence of such a study, we can only report our findings for Quiroga, and must leave comparisons with Mexico as a whole and with other parts of Mexico to another time.

QUIROGA SURNAMES

Our main source was the March 6, 1940, Federal census. We copied all 3,899 names of the inhabitants of our area (the Villa of Quiroga and its six dependent ranchos) from the original census forms, filed in Mexico City. The first step was to determine the number of people possessing each surname. All males and all unmarried females were entered under the father's family name. Wives, widows, and divorced women were entered under their maiden names. Since marital status was shown for all, and because of the consistent method of formation of the Spanish compound surname, little difficulty was encountered. All names, excepting those of illegitimate children, are composed of the baptismal name followed by the father's surname and the mother's surname. The two surnames may be joined by "y" (and), but this custom does not obtain in Quiroga and is not so common in Spanish America as it is in Spain. Occasionally a compound name will be inherited as a whole, in which case it is also followed by the mother's maiden name, and thus gives rise to a tripart compound surname. In the Quiroga area this was true only for the Díaz Barriga family. Wives add the particle "de" (of) and their husband's patronymic to complete their names. Widows may insert "viuda" (widow) in front of the "de," in which case they usually drop the matronymic, but more commonly they revert to their maiden names. Examples illustrating the statements given above are shown in table 21.

TABLE 21.—*Formation of names in Quiroga*

First name	Compound surname	Relationship	Sex	Status
Diego	Fuentes Ayala	Head of family.	Male	Married.
María	Villaseñor Ramos de Fuentes.	Wife	Female	Do.
Salvador	Fuentes Villaseñor	Son	Male	Single.
Luis	do	do	do	Do.
Ma. Trinidad	do	Daughter	Female	Do.
Rafaela	Díaz Barriga Gutiérrez	Head	do	Widow.
Luis	Sierra Díaz Barriga	Son	Male	Single.
José María	do	do	do	Do.
Romana	do	Daughter	Female	Do.
Lucía	Huerta, Viuda de Valdovinos.	Head	do	Widow.
Francisco	Valdovinos Huerta	Son	Male	Single.
José	do	do	do	Do.
Felipe	Ramírez Barriga	Head	do	Married.
Luisa	Ramírez Aguilar de Ramírez.	Wife	Female	Do.
Gregoria	Ramírez Ramírez	Daughter	do	Single.
Jesús	do	do	do	Do.
Luis	do	Son	Male	Do.

At the time of the 1940 census there were 252 different family names represented in Quiroga. This number does not consider the variations in some names introduced by ignorance on the part of the informant or of the census taker, or by the common interchange of "b" and "v," of "s" and "z," of "l" and "r," of "c" and "s," of "p" and "b," of "c" and "z," of "e" and "i," of "o" and "u," of "a" and "e," of "i" and "y," of "y" and "ll," of "li" and "ll," and of "r" and "rr," the use and omission of "h" before "o" and "u," and changes in gender and number. Illustrations of variations include: Abrego and Abrigo, Alva and Alba, Bernal and Vernal, Campo and Campos, Campuzano and Camposano, Ceja and Seja, Cendejas and Zendejas, Cortez and Cortés, Chávez and Chaves, Díaz and Díez, Espinoza and Espinosa, Gaitán and Gaytán, Gómez and Gomes, Ledezma and Ledesma, López and Lopes, Meza and Mesa,

Milián and Millán, Monroy and Monrroy, Olayo and Olallo, Ortiz and Ortís, Páez and Páiz and Baes, Pérez and Peres, Reynosa and Reinosa, Santoyo and Santollo, Servín and Cervín, Sorio and Soria, Téllez and Telles, Tovar and Tobar, Urquieta and Hurquieta, Valdés and Valdez, Valdovinos and Baldovinos, Vásquez and Vazquez, Vergara and Velgara, Zavala and Zabala, etc. Some of the variant forms have become standardized; e. g., the true patronymics most commonly are spelled to end in "-ez" rather than in "-es," and the "-es" form usually represents ignorance since that is a Portuguese and not a Castillian termination. Even among educated people there is not consistency, especially in the use of "b" and "v," and it is not uncommon to find different members of the same immediate family varying in their spelling of the family name. Some variants apparently have been crystallized for a long time and now represent different families, as in Pedraza and Pedroza and in Ferreyra (Ferrera) and Herrera, and a few of these were listed separately.

The number of persons per family name ranged from only 1 to 219. The first 4 family names (Barriga, Herrera, González, and Fuentes) embraced more than 17 percent of the inhabitants; the first 10 names, 30 percent of the population; and the first 25 names nearly 52 percent of the people of Quiroga. The following list gives the more important family names, arranged in the order of number of individuals bearing each name. These 101 names (each representing 8 or more individuals) comprise more than 88 percent of the total population.

Surnames in Quiroga

Family name:	Number bearing name	Family name—Con.	Number bearing name
Barriga	219	Hernández	60
Herrera	174	Estrada	60
González	144	Torres	56
Fuentes	140	Guzmán	54
Chávez	99	Ponce	53
García	91	Díaz	50
Calderón	86	Gutiérrez	50
Rodríguez	76	Chagolla	48
Campuzano	72	Rivera	47
Coria	70	Ruiz	47
López	68	Flores	42
Medina	67	Tovar	42
Peña	66	Anita	41
Valdovinos	64	Vázquez	41
Ortiz	60	Ramírez	39
Vargas	39	Orozco	14
Rangel	38	Reyes	14
Aguilar	38	Álvarez	13
Arriaga	36	Fabián	13
Pineda	33	Huerta	13
Farías	32	Urueta	13
Juárez	31	Mejía	12
Martínez	30	Monroy	12
Rico	29	Romero	12
Cázarez	28	Sorio	12
Pedraza	28	Fernández	11
Salmerón	26	Marínez	11
Garnica	25	Balderas	10
Magos	25	Caballero	10
Meza	25	Fuerte	10
Sierra	25	Hinojosa	10
Olayo	24	Rosales	10
Sánchez	24	Villicaña	10
Villanueva	23	Acosta	9
Gasca	21	Armenta	9
Servín	21	Coronado	9
Villalobos	21	Huacuz	9
Morán	20	Márquez	9
Saucedo	20	Rojas	9
Espino	19	Villaseñor	9
Sixtos	19	Alvarado	8
Cervantes	18	Corral	8
Mexicano	18	Cuín	8
Robles	18	Durán	8
Ayala	17	Gómez	8
Milián	17	Guillén	8
Frutos	16	Sagrero	8
Hurtado	16	Vega	8
Villa	16	Zamora	8
Castro	14	Zavala	8
Magaña	14		

The incidence of the remaining names was: 5 names with 7 persons, 6 names with 6 persons, 14 names with 5 persons, 13 names with 4 persons, 23 names with 3 persons, 21 names with 2 persons and 68 names with 1 individual. The family names represented by eight or fewer individuals commonly were restricted to 1, 2, or 3 family groups; and where there were only 1 or 2 persons with a certain family name they most frequently were women. Examples include: Espinoza, 5 persons in 1 family; Madrigal, 5 in 1 family; Oseguera, 4 in 1 family; Quintana, 7 in 1 family; Baltazar, 7 persons, 6 in 1 family and the wife in another family; Padilla, 7 persons, 3 in 1 family, and the wives in 4 other families; Cacarí, 2 persons, 2 wives; Alfaro, Guerrero, Mendiola, Solorio, and Villegas, 1 person each, all wives or widows; etc.

CHANGES IN SURNAMES

For comparative purposes, 1,092 names were checked in the civil register lists of births, deaths, and marriages for scattered years from 1860 to 1873 (marriages 1860–63, births 1862–63 and 1873, deaths 1860–64). We may assume that the recorded 1,092 names represent an adequate cross section of the population of Quiroga some two generations ago. During the 1860–73 period there were represented 264 family names, which is slightly more than the 252 names in 1940. At the earlier period there were 114 names not present in 1940, but 102 names on the 1940 list were lacking. Most of these changes probably were in the families represented by only 1 or 2 individuals, of which there were 110 in 1940. Apparently the majority of the additions and losses of family names can be attributed to the temporary introduction of a name through marriage of a Quiroga man with a woman from the outside. From other sources we know that such marriages took place rather frequently within a radius of about 15 miles, and especially with women from the neighboring towns of Tzintzuntzan, Santa Fe, San Jerónimo, San Andrés, and Pátzcuaro, and the westerly ranchos dependent on Morelia. A less important source of change is to be found in the movements of State and Federal employees (tax collectors, soldiers, post-office employees, school teachers, highway workers, physicians, and the like), transport workers (*arrieros*, *choferes*, etc.), merchants, and artisans and craftsmen (masons, carpenters, painters, shoemakers, etc.).

The most notable change during the past two generations was in the ranking of the family names. Some families, such as the Barriga, González, Fuentes, Chávez, García, Calderón, Rodríguez, López, Medina, Peña, Valdovinos, Ortiz, Torres, Guzmán, Ponce, and Gutiérrez have maintained themselves in the upper brackets. A number have made great gains, such as the Herrera, Campuzano, Estrada, Díaz, and Flores families; and yet greater increases were registered by the Coria, Hernández, Chagolla, Rivera, Ruiz, Anita, Vázquez, Vargas, Arriaga, Pineda, and Juárez families. Great decrease is indicated for the Ramírez, Martínez, Rojas, Zavala, Pérez, Rangel, Aguilar, Valdés, León, Sánchez, Sierra, Castañeda, Delgado, Salmerón, Villanueva, and other families. Some numerous families of the 1860's have become extinguished, such as the Duarte, Nava, Navarro, Tinoco, Cuiriz, Olachia, Salgado, Moreno, Olguín, Ontiveros, Oñate, Pizano, and Sayago. On the contrary, there are 10 new or renewed families, with more than 15 individuals each, namely, the Tovar, Farías, Cázarez, Garnica, Gasca, Villalobos, Morán, Sixtos, Milián, and Frutos.

The ranking of the top 43 families in the period 1860–73 was as follows:

Fuentes.	Pérez.
López.	Estrada.
Rodríguez.	Aguilar.
Ponce.	Valdés.
Barriga.	León.
Peña.	Sánchez.
Torres.	Sierra.
Guzmán.	Castañeda.
González.	Delgado.
García.	Duarte.
Ramírez.	Nava.
Calderón.	Salmerón.
Martínez.	Díaz.
Ortiz.	Villanueva.
Gutiérrez.	Campuzano.
Medina.	Flores.
Chávez.	Gómez.
Rojas.	Hurtado.
Valdovinos.	Roque.
Zavala.	Toledo.
Herrera.	Villicaña.
Rangel.	

Lacking precise information for most of the cases of extinguished families, and for families which have declined in representation, we must present a combination of theory and historical fact to explain the phenomenon of decrease. Although more males are born than females, more females survive, and there is normally a slightly larger number of females than males in the total population. When this general trend is united with the birth or survival only of females in a majority of the family groups with the same surname there results a general diminution of persons with that surname. So long as one or more males survive long enough to have progeny there is no extinction of the family name; but the coincidence of several successive generations of female predominance together with considerable impotency and celibacy among the males will extinguish the line. Along with this set of events is the emigra-

tion from the community of males to a somewhat greater extent than females. Revolutions and military service, opportunities for work outside of the community (especially in the larger cities, northern Mexico, and in the United States), and the financial, cultural, and sensual lures of the large cities, have taken many men and boys from Quiroga; and a considerable number of these never return to make a home in their birthplace.

The rise of new families is initiated by men or families moving in from the outside—usually from communities within northern Michoacán. Often this occurs when a Quiroga woman, or woman of a family which owns houses or lands in the area, marries an outsider, and the couple settles in Quiroga to benefit from the woman's possessions. Also, there has been a constant movement into Quiroga from the surrounding ranchos and towns that are or have been within the political and economic orbit of Quiroga. This hinterland includes all of the northern part of the basin of Pátzcuaro, from Tzintzuntzan around to San Andrés, and northward and eastward to include some of the communities in the *municipio* of Morelia. Whenever such families have numerous male offspring there results, in two generations, a marked increase in the number of persons carrying the family names involved.

COMPARISON WITH CHILEAN NAMES

For lack of comparable data in Mexico, we will contrast the more numerous families in Quiroga with those in Chile. According to a study by Thayer Ojeda (1917, 1919) of some 167,000 names compiled from various lists of some 40 years ago, there are many names in common, but the order of importance differs greatly, and many high ranking Chilean names are completely absent in Quiroga. This result is expectable, since we are comparing part of a *municipio* with a whole country. Probably comparison with other parts of Mexico would give quite different results. From the first 10 of the Chilean list only González, García, and Rodríguez appear in the first 10 in Quiroga. To these names can be added Herrera, López, Guzmán, Díaz, and Gutiérrez, which are in the top 25 places on both lists. There follows a list of the top 40 names in Chile. The 8 marked with an asterisk do not occur at all in Quiroga.

1. González.	21. Alvarez.
2. Silva.	22. Gómez.
3. Pérez.	23. Sánchez.
4. Rojas.	24. Vázquez.
5. Díaz.	25. Gutiérrez.
6. Ramírez.	26. Reyes.
7. Valenzuela.*	27. Soto.
8. Muñoz.	28. Ortiz.
9. García.	29. Contreras.
10. Rodríguez.	30. Morales.
11. Martínez.	31. Espinoza.
12. Fernández.	32. Ahumada.*
13. Vargas.	33. Escobar.*
14. López.	34. Núñez.*
15. Herrera.	35. Carrasco.*
16. Castro.	36. Figueroa.*
17. Bravo.*	37. Jiménez.
18. Guzmán.	38. Romero.
19. Molina.	39. Jara.*
20. León.	40. Olivares.

TYPES OF SURNAMES

Before we can consider the ethnic connotations of family names in Quiroga we must consider methods of formation and types of surnames. The oldest form of surname, apparently, is the true patronymic which was formed in the Iberian Peninsula by adding -az, -ez, -iz, oz, -uz, -s, -as, -es, and -is to some form of the father's Christian or baptismal name. In this manner we have López (son of Lope), Sánchez (son of Sancho), González (son of Gonzalo), etc. The above-listed terminations originally had regional and dialectic significance, but the Christian reconquest of the Peninsula from the Moslems, and considerable migration from other parts of Iberia into southern Spain, together with the lack of a standardized orthography, make it extremely hazardous to assign specific provincial origins to the names with various endings. However, in general, the endings in "s" instead of "z" come from western Iberia. There are said to exist more than 200 of these patronymics, of which some 40 are to be found in Quiroga. Somewhat more than a quarter of the inhabitants of Quiroga have surnames of this type.

An ancient and patrician form was derived from the estate of domains of a noble or landholder. These estate names (*apellido señorial y solariego*) were formed by following the baptismal name with "de" (of) and the name of the possession, as in

Juan de Talavera (Thayer Ojeda, 1917, 1919).[2] In time common people with no lands approximated the seignorial names by taking as surnames the names of the places where they were born or where they had their homes. In this fashion a certain Juan born in Talavera might be Juan Talavera or Juan de Talavera also. The presence of the "de" does not indicate noble ancestry necessarily, but the absence usually denotes a plebian origin. No family in Quiroga uses the "de" by itself or in any combination. Formerly there was the name "Ponce de León." There are many of these place-surnames (*nombres lugareños*) in Quiroga, such as Aguilar, Arriaga, Ayala, Heredia, León, Medina, Mendoza, Mejía, Miranda, Morán, Pantoja, Rocha, Toledo, Trujillo, Zamora, and Zaragoza. Of the same general type are names derived from such natural and cultural features as caves, rocks, streams, hills, plants, castles, settlements, forts, etc. Among such names in Quiroga are: Arroyo, Barrera, Campos, Castañeda, Castillo, Castro, Corral, Cuevas, Estrada, Fuentes, Fuerte, Fraga, Granados, Huerta, Mesa, Molina, Morales, Olivares, Ortega, Peña, Pineda, Ríos, Rivera, Robles, Rosales, Sierra, Soto, Torres, Tovar, Vega, Vargas, and Villa. The various place-surnames are not very helpful in determining origins, since individuals with, for example, Basque names such as Arriaga and Ayala may be descendants of individuals who came over to New Spain from Andalucia, and whose ancestors for several hundreds of years had lived in New Castille. Owing to local intermarriage in southern and central Spain there may be very little Basque left excepting the name. About all that can be presumed is that the male ancestry ultimately was from one or another of the Spanish provinces. A third important group of surnames includes those derived from nicknames pertaining to physical and moral qualities, and names from professions, occupations, or other comparable items. In this heterogeneous group fall such names as Caballero, Cortés, Farfán, Gallardo, Guerrero, Herrera, Leal, Márquez, Pulido, and Salmerón. Also there might be included objective names of uncertain original application such as Barriga (belly), Calderón (cauldron), Corona (crown), Flores (flowers), Luna (moon), etc.

[2] In addition to the works by Thayer Ojeda, for discussion of Spanish surnames, see Godoy Alcantara, 1871; Ríos y Ríos, 1871; and Gosnell, 1938.

Of the various other types of surnames there is one more which is important for the Quiroga area. This is the type composed of baptismal names, and of the full saint's name as in Santa María and Santana. In general, old Christian families in Spain did not have or take such names. They were usually assumed by Jews and Moslems converted to Christianity. Examples of such names in Quiroga are Aparicio, Baltazar, Bernal, Casimiro, Cruz, Fabián, Paz, Reyes, Román, Santillan, and Santoyo, all of which names are to be found among the sixteenth-century Spanish colonizers of Mexico (Bermúdez Plata 1940–46; Icaza, 1923; O'Gorman, 1945). However, the same process took place on the conversion of the Indians that had occurred with the Jews and Moslems in Spain. Hence, many of these Christian surnames may go back to pure Indians who assumed them in the sixteenth century. We have further assurance of this from an examination of the surnames in the neighboring Tarascan Indian towns of Santa Fe, San Jerónimo, and San Andrés. In these dependencies of Quiroga there must be at least 60 Christian surnames represented, among which the most common appear to be such as Fabián, Bautista, Dimas, Gabriel, Lucas, Gaspar, Alonzo, Baltazar, Mateo, Marcos, Trinidad, Cruz, Angel, Antonio, Sebastián, Jerónimo, Santos, Ignacio, Floreano, Salvador, Santana, Manuel, Aparicio, Valentín, Reyes, Patricio, Luciano, Cornelio, Jacinto, Dionicio, Simón, Santiago, Maximiano, Pablo, Bartolo, Andrés, Basilio, Agustín, Dolores, Francisco, Lázaro, Timoteo, and Bruno. Of such names, in addition to the 11 mentioned earlier, there are in Quiroga, Conrado, Estela, Floriano, Magos, Sixtos, and Trinidad. In the 1860's there also were Carlos, Amador, Gil, Guido, Guadalupe, Jaimes, Lázaro, Mateo, Marcos, Pio, Plascencio, Quirino, Ramón, Santacruz, and Ventura. An examination of the records (Bermudez Plata, 1940–46; Icaza, 1923; O'Gorman, 1945) shows that there was a sprinkling of many different Christian surnames among the sixteenth-century immigrants to Mexico, but only Alonso, Bernal, Gil, and especially Martín, were present in significant numbers. Probably we will not be very wrong if we assume that all Quiroga families with Christian surnames (excepting the Bernal) are descended in the male line from pure Indians in the sixteenth century or probably later. These 16 families comprise 99

persons. Since none of these families, excepting some of the Aparicio, Cruz, Magos, and Sixtos, are found in the ranchos, our assumption is further strengthened. We have shown elsewhere that the ranchos have the least Indian blood of the various communities in the Quiroga area.

ETHNIC ORIGINS

A survey of the 252 Quiroga surnames shows that the great majority are Spanish in form and origin. Possibly five names are ultimately western Iberian (from Portugal and Galicia)—Acosta, Ambriz, Ferreyra, Lugo, and Mejía. Four names are of Arabic origin (Alcaraz, Alfaro, Farfán, and Medina), but all except Farfán are Spanish place names and probably do not indicate Moorish blood. Perhaps 14 names are Basque or Navarrese in origin (Amaya, Arredondo, Arriaga, Ayala, Durán, Elizondo, Fraga, Garnica, Landa, Miranda, Uribe, Urquieta, Urueta, and Zavala), and these represent 126 persons. There is 1 Italian family—Vercellino. Seven are possibly or definitely Spanish, but no information was located concerning their origins—Bucio or Busio, Ceja or Seja, Cendejas or Zendejas, Esqueda, Garria, Marínez, and Nárez. There remain 9 family names which probably or definitely are American Indian in origin. Tarascan forms are Anita, Cacarí or Cacaré, Cuín, Huape, Huacuz, Nambo, and Tzintzún; while Chagolla and Mexicano probably are Mexicano (Nahuatl).

INDIAN SURNAMES

It is interesting to speculate as to how Quiroga, which was pure Indian during the sixteenth century, and which is now essentially mestizo, received the various European surnames, and why and how some Indian family names survived. We know that the missionaries gave a Christian name to every individual baptized. Quite often such an individual would be known to the Spaniards only as, for example, "Juan, Indio" (John, an Indian). In the parish registry his son would be inscribed as, perhaps, "Francisco, hijo de Juan y María, indígenas" (Francis, son of John and Mary, Indians). If the need for a surname arose this boy might call himself Francisco Juan. Some of the adult Indians, when baptized, had Spaniards as godfathers; and often they would take the name of the godfather as their European surname—thus becoming Gómez or Martínez or Infante without benefit of European blood. Apparently some of the Indians took the surname of their *encomendero* or master, much as did some of the Negro slaves in the United States. However, many of the Indians took or retained an Indian surname. We know very little about the name customs of the Tarascan Indians at the time of the conquest, and most of what we know is derived from the fragmentary and garbled material incorporated in the Relación de Michoacán (1903). This Relación was written about 1539 by an anonymous Franciscan friar. Both within the same edition and between the two published editions of this work there is great variability in the spelling of proper names. Consequently, it is almost impossible to analyze the some 60 or 70 personal names of Tarascan Indians presented, and to determine roots, meanings, and possible prefixes or suffixes of relationship. Perhaps there was nothing comparable with our family names; but there are indications that clan or sib names were used by some individuals in addition to some type of a given or personal name. From the Relación de Michoacán (1903, pp. 61, 69, 134, 289, 321, etc.) we learn that Curicaveri, the god of the Chichimec-Tarascans, was the ancestor of the ruling families with the *apellido* (surname) of Eneani, Zacapuheretin, and Uanacasin (the spelling of each of these names varies greatly from page to page). Also, we learn that the ruler or *cazonci* was the representative on earth of Curicaveri, and that the *señores* (lords) of his lineage were the Huacuz-echa or eagle-clan. Actually, the term *huacuz* or *huacús* is applied to an *aguililla* or hawk of the *Buteo* genus. The name Huacuz is still one of the most common Tarascan surnames in the Pátzcuaro Basin, especially in Santa Fe. Apparently most or all of the members of the ruling class were members of the three families mentioned above, but those "surnames" were not used as such in the Relación. Possibly all of the names mentioned in the Relación were given names, occasionally linked with a nickname as in the case of the last *cazonci*—Tangaxoan Zincicha, who was baptized Francisco. His sons and grandsons took the surname of Huitziméngari, as in Don Antonio Gitziméngari who was *regidor* of Pátzcuaro when a charter was given the Indians of what is now Quiroga in 1534, and his son Don Constantino Huiziméngari who was governor of Pátzcuaro in 1589. Our assumption that names

cited in the Relación were given names is strengthened when we discover that a ruler of Tariaran or Mechuacán (modern Tzintzuntzan) was Zinzuni, which means hummingbird. This name bears no apparent relationship to those of other lords in the area although presumably all were related. It is of interest to note that Zinzún (Tzintzún, Çinçún, etc.) is one of the four most common Indian surnames in the Pátzcuaro area today. We should mention here that Boturini (1746) lists among the manuscripts that he collected in Mexico in the eighteenth century a "Lista de las familias que hubo entre los Indios Tarascos, y los tributos que pagaban a sus casiques," but this appears to be lost.

Since many of the surviving Tarascan surnames are names of items in nature (especially of birds, but including other animals, plants, rocks, etc.), the existence of a totemic system may be indicated. However, the matter is very doubtful. Such names might well represent nicknames or given first names that were transformed into surnames under European influence. We must remember that in English we have such family names as Hawk, Fox, Flower, Apple, Rose, Hawthorne, Sparrow, Bean, Bear, Bird, etc., and with no implication of a totemic origin or connection. Also, names of occupations and status are encountered, such as Achá (a lord or ruler) which is still found in the Sierra Tarascan villages, Anita (derived from Anitani, one who combs or cleans cotton and wool) which is quite common in the Quiroga area, and Cacarí (a stone cutter) which is present in Quiroga. This may mean that the Tarascans had or were developing the occupational type of name which has given us so many names, such as Smith, Taylor, Bishop, Lord, etc.

Supplementary material can be obtained from the colonial documents housed in the Archivo General de la Nación in Mexico City, especially in the divisions on Indians, Lands, and Congregations. A survey of the first four volumes of the Ramo de Indias, which cover the later part of the sixteenth century, shows that in the Tarascan villages more than half of the names cited were a combination of Christian first name and Tarascan surname, as in Angel Tzintzún of Capácuaro, Juan Coneti of Cherán, and Francisco Cuini of Tupátaro. In second place, with perhaps a third of the names, were combinations of two Christian names, as in Francisco Gabriel, Pedro Miguel, and Miguel Constantino. Finally, there was a sprinkling of common Spanish names, such as Lorenzo de Morales, Marcos García, and Pedro Hernández. All of the above-named individuals were pure Indians, since any mestizos or Spaniards were classified as such.

For Quiroga itself we have the collection of documents, beginning in 1534, which constitute the titles of the Indian pueblo of Cocupao and the adjacent congregated pueblos of Sanambo and Zirandangacho. In 1603 there was presented a list of the Indians of Zirandangacho-Sanambo who were settled on lands just south of present-day Quiroga. Among the 25 families mentioned, all had Indian surnames excepting possibly 3—Cantor, Abrero, and Cachas. The others included 4 Cuirís, 3 Tzitzique or Tzintziqui, 2 Petacuas, and a scattering of such extant names as Anitani, Tzintzún, and Guacús or Huacuz. In 1603 we find that lands bordering Quiroga were owned by Alonzo de Cáceres (given variously as Caserez, Cásares, Cázares, and Cazarez). In 1681–82 Indians of Quiroga had such names as Juan Guacasa, Juan Anita, Juan Cuirís, Juan Miguel, Sebastián Andrés, Pedro Melchor, and Juan de la Cruz. By 1714 we find the Indian officials of Quiroga with the names Diego Juan, Agustín Antonio, Nicolás Martín, José Guzmán, and Miguel de Cáceres. One mestizo citizen of the pueblo is mentioned, Juan de Mendoza; and the lands to the south and east belonged to Francisco Javier de Silva and Manuel Ponce de León. The latter person, either a Spaniard or a mestizo, and a citizen of Pátzcuaro, and his family held (and had held since about 1622) all of the lands that now comprise the rancho of Atzimbo, and perhaps Caríngaro, Icuácato, and Sanambo. Among the known relatives of the Ponce de León family, living in the area, were individuals with such family names as Díaz, Barriga, Tovar, Díaz Barriga, and Rueda. It is noteworthy that today the Ponce family is well represented in the ranchos and in Quiroga proper, as is true for the Tovar family to a lesser extent; while the Barriga, Díaz, and Díaz Barriga families have their greatest representation in the ranchos, and the Barriga, in first place, are as numerous as the next two families together in the ranchos.

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SECULAR NAME CHANGES

From the fragmentary material available it appears that during the sixteenth century Quiroga was made up entirely of Indians whose names were predominantly Tarascan. By the end of the seventeenth century Christian surnames vied with Tarascan family names, but the community apparently was still all Indian. During the eighteenth century Spanish surnames appeared, and mestizos (and perhaps whites) constituted some portion of the population. During this same century negroids also formed a part of the population. Probably the mestizos and negroids came into the community by the same processes; i. e., by marriage with Indian women, and by setting up as tradesmen and craftsmen. Apparently there were three common sources for these extraneous elements. Valladolid (modern Morelia) and Pátzcuaro were the two nearest and largest centers of white, mestizo, and negroid population in Michoacán. And just to the east and south was the great maize-growing and cattle-raising hacienda whose northern portion is now occupied by the ranchos of Atzimbo, Caríngaro, Icuácato, and Sanambo. Probably the resident laboring population and illegitimate sons of the landlords contributed most directly to Quiroga.

Two sources give us imperfect statistics on race status in Quiroga during the eighteenth century. In 1742 Jose Antonio de Villaseñor y Sánchez, cosmographer for New Spain, carried out a rough census of families, which was published in 1746 (Villaseñor y Sanchez, 1746–48). In discussing the partido of Zinzuntza (Tzintzuntzan), Villaseñor states that the dependent pueblo of San Diego Cocupa contained 70 Indian families, 60 families of mestizos and mulattoes, and 30 families of Spaniards. Unfortunately we cannot determine the proportion of mestizos and of mulattoes, nor can we be certain that the so-called Spanish families were really white or merely mestizos culturally and socially advanced enough to be classified as "Españoles." There was little at that time in this small Indian village to attract pure whites.

Our second source is the parish register. Beginning in 1781 in Quiroga, separate baptismal books were kept for different races or castes. One book was set aside for "Mulatos, Lobos, Negros y Moriscos," that is, for Negro-white and Negro-Indian castes, and Negroes. This book covered the years 1781 to 1831. In the Quiroga area, during the years mentioned, there were baptized two Negroes with the surname of Rincón. There were noted no *lobos* (offspring of an Indian and a Negro or mulatto), and no *moriscos* (offspring of a mestizo or white and a mulatto).[3] Numerous mulatto children were baptized, with the following surnames:

Acosta.	Gaona.	Ortiz.
Alexandre.	García.	Palencia.
Almanza.	Guzmán.	Pérez.
Alvarado.	Hernández.	Piña.
Arciniega.	Hidalgo.	Pulido.
Ayala.	Hurtado.	Ramírez.
Borja.	Jacobo.	Rangel.
Cabrera.	Jiménez.	Redondo.
Calderón.	Juárez.	Reyes.
Campuzano	León.	Rincón.
Castañeda.	López.	Rodríguez.
Castillo.	Medina.	Sánchez.
Castor.	Méndez.	Santiago.
Chico.	Molina.	Santoyo.
Conejo.	Morales.	Serna.
Corona.	Muñoz.	Vidal.
Cuirís Ponce.	Navarro.	Zacapu.
Domingo.	Ochoa.	Zamorano.
Escobar.	Olguín.	Zavala.
Espíndola.	Oliva.	

This marked presence of negroids in Quiroga, where none are now noted, brings up an interesting point. We know that at one period in colonial history there were more negroids than whites in Mexico. Also, it is known that Negroes and mulattoes often were used as overseers on the haciendas and elsewhere. Furthermore, any extensive examination of colonial records discloses that there were hundreds of communities in colonial Mexico where a large fraction of the population were negroids. This situation was not confined to the Veracruz and Guerrero coast lands of present concentration of visible Negro blood, but obtained from Chihuahua to Chiapas. There are a number of communities listed as being all mulatto in the eighteenth century whose populations now show little or no traces of Negro blood. On the other hand, a number of individual Negro

[3] The terminology and percentages of white, Negro, and Indian blood involved in Mexican mixed castes during the colonial period is exceedingly complex and variable. The definitions given above approximate the most commonly accepted definitions of *lobo* and *morisco*.

physical characteristics appear in so-called mestizos in many parts of Mexico. This is especially noticeable in a certain dark skin coloration, flaring nostrils and flattened nose, and in a crinkly type of hair. Specifically for northern Michoacán, in the middle of the eighteenth century, important numbers of Negro and mulatto families are cited for such towns as Tacámbaro, Tzintzuntzan, Indaparapeo, Tarímbaro, Santa Clara, Uruapan, Huango, Chucándiro, Acuitzio, Angamacutiro, Charo, Maravatío, Taximaroa, Irimbo, Tuxpan, Zitácuaro, Tlalpujagua, Cuitzeo, Zamora, Sahuayo Jacona, Peribán, Jiquilpan, Tlazazalca, La Piedad, Ecuandureo, Atacheo, Pátzcuaro, and Valladolid. It should be noted that the Sierra Tarascan villages had few or no negroid families. Apparently, in the Negro-white-Indian blend, the negroid characteristics tend to be obscured by those of the other two races, and now the presence of Negro blood normally is not noticeable. However, the writer believes that the great majority of so-called Mexican mestizos possess traces of Negro blood.

In this connection, it will be noted that the above list of mulatto surnames in the Quiroga area contains 33 family names which are still current; and also, that several Indian names are involved, such as Cuirís Ponce and Zacapu, and perhaps Alexandre, Conejo, Domingo, Jacobo, etc. The writer recalls some four or five individuals in Quiroga who showed possible negroid physical traits.

THE INDIAN ELEMENT

One book in the parish register was set apart for Indians alone. The earliest located covered the years 1788 to 1815. Unfortunately, lack of time prohibited our doing more than scanning a few pages. The family names ran the gamut from Tarascan, such as Anitan, Querenda, and Tzitziqui, to Spanish names, such as Barriga, Flores, León, Ontiveros, Peña, Rodríguez, and Valdovinos. A third book was for Españoles, Mestizos y Coyotes (Spaniards, mestizos, and offspring of Indian-mestizo unions). The earliest volume located for this group covered the years 1799 to 1822.

By the nineteenth century and the end of the Spanish colonial period, Quiroga had developed a surname pattern quite similar to that which obtains today. However, it was still considered to be a predominantly Indian pueblo, as indicated in the magnificent report by Martínez de Lejarza (1824), where San Diego Cocupao is termed a village of Indians. During the remainder of the nineteenth century important changes took place. Tarascan ceased to be a live language in Quiroga. The lower part of town was taken over by the mestizos and whites; negroids ceased to be recognized as such; and the old República o Comunidad de Indígenas (Republic or Community of Natives; i. e., Indians) lost all of its lands and virtually ceased to exist. However, despite predominance of Spanish surnames, and in spite of the loss of communal lands and of their mother tongue, a majority of the inhabitants of the upper part of town (formerly the Barrio de San Miguel, and now commonly referred to as El Calvario) think of themselves as Indians, and are so considered by the other town inhabitants. Although physically nearly all of the people of El Calvario resemble mestizos, and are no more Indian than an equal or larger number of people in the lower town, they are set apart from and against the remainder of Quiroga in a number of ways (economy, education, local politics, religion, etc.) which are discussed in the sections of this report dealing with those matters.

Since the Madero Revolution, the agrarian *ejidal* program has revived or strengthened the feeling of apartness from the remainder of the town. The details of this program are discussed in the section on Land Ownership. This program revived the legally extinct Comunidad de Indígenas. The heads of families who considered themselves and were considered to be of the local Indian stock were granted an agrarian *ejido*. Practically all of these *ejidatarios* live in El Calvario; that is, in *cuarteles* II and III above the streets of El Cuerno and Manuel Doblado, and especially along the Calzada Ramón Corona. Furthermore, in January of 1946, of the 73 heads of family who are members of the Comunidad Indígena del Calvario, all but five participate in the agrarian program and are *ejidatarios*.

EL CALVARIO RESIDENTS

We have attempted to show the families that are considered now as Indian families in Quiroga. This attempt is demonstrated in the following list. The names are all of the surnames represented in

Names of El Calvario Residents

	Anaya	--	1	4	López	12	3
5	Anita	20	4	1	Martínez	2	3
2	Avila	4	1	1	Medina	1	--
	Baltazar	--	1		Mejía	5	--
	Barriga	3	--	1	Mendoza	1	1
1	Bastida	2	--	4	Mexicano	15	3
	Bedolla	1	--	2	Meza	6	2
	Bermúdez	1	--		Milián	--	1
	Calderón	--	1		Morales	--	1
	Carillo	1	--		Nárez	1	--
	Castillo	1	--		Olayo	1	--
	Castro	1	1		Ortiz	1	1
3	Cázarez	16	--	1	Pacheco	1	--
1	Cervantes	5	--		Páiz	1	--
1	Coria	7	--	2	Pantoja	3	--
	Coronado	1	--	1	Paz	5	--
	Cruz	1	--	1	Pedroza	1	1
1	Cuín	3	--	9	Peña	31	12
1	Chávez	2	--		Peñaloza	1	--
2	Chagolla	10	3	1	Pérez	2	--
	Delgado	1	--	1	Quintana	7	1
	Durán	1	--	2	Rangel	11	2
	Espinoza	--	1	1	Rendón	2	--
	Esqueda	--	1	1	Reynosa	1	--
2	Estrada	13	3	1	Rivera	2	1
1	Fabián	6	1	1	Robles	1	--
	Farías	--	1	1	Rodríguez	2	1
1	Fernández	5	--	1	Rosales	1	--
6	Flores	21	9		Ruiz	--	2
	Fuentes	3	--	1	Salazar	2	--
1	García	6	1	4	Salmerón	18	6
1	González	9	1	1	Sánchez	3	--
2	Gutiérrez	2	--		Sixtos	--	1
2	Guzmán	10	2		Soto	--	1
	Hernández	2	2		Torres	1	1
2	Herrera	6	1	12	Valdovinos	47	14
	Huacuz	--	1		Vallejo	1	4
	Huerta	1	1	3	Vázquez	9	--
1	Juárez	3	1	2	Villa	9	--
1	Lara	1	--	1	Villanueva	3	1

the part of Quiroga known as El Calvario, according to the census of 1940; i. e., blocks 5, 6, and 7 of *cuartel* II and blocks 3 and 4 of *cuartel* III. Some of these families are intrusive, and many family names are represented only by maiden names of married women. A few members of the Comunidad Indígena reside in other parts of town, but they possess surnames represented in the list. The numbers to the left of the names indicate the number of heads of family. If no number is given, as in the case of Barriga, it means that either the male line has become extinct, or else the possessors are "non-Indian" women who have married into the community. The first column of numbers to the right of the names shows the total number of individuals with those surnames. The second column to the right indicates the number of *ejidatarios* representative of the various families. The lack of a figure in this column indicates either that the male line is extinct, or that no one of that name is considered to be a member of the Indian community. The exceptions are the five heads of family mentioned above, and their names are not certainly known to us. The names and figures for the *ejidatarios* are not strictly comparable with the material from the 1940 census, since they represent all individuals who have had *ejidal* rights during the period 1929 to 1944. During that span of time the number of *ejidatarios* has varied between 36 and 85 in any 1 year. Where a surname has no figures immediately to the right or left it indicates a family whose male line has become extinct in the community some time since 1929. A discrepancy in the number of heads of family indicates death of an adult, or marriage and coming of age of a minor male.

It will be noted that of the 80 surnames represented in El Calvario, 43 are or have been represented among the *ejidatarios*. And of these 43 family names some 25 are still represented in the male line. However, only a few of the names are distinctively Indian: Anita, Chagolla, Huacuz, and Mexicano, as well as probably Baltazar, Fabián, and Sixtos. The Cuín family, which is definitely Tarascan, probably is intrusive from neighboring Santa Fe, and thus would not be eligible for membership in the Comunidad Indígena del Calvario. However, it may be 1 of the 5 families which have refused to participate in the agrarian program.

INDIAN SURNAMES IN THE QUIROGA AREA

We have listed previously the nine Indian names still represented in Quiroga. Those not in the agrarian community, in addition to Cuín, are Cacarí, Huape, Nambo, and Tzintzún. The assumption that these families represent intrusions from the Tarascan villages in the neighborhood is based on the results of a survey of the more common Indian surnames in the region. On the basis of births, marriages, and deaths recorded from 1919 to 1945, the leading Indian names in various

communities, arranged according to approximate frequency of mention, are:

Tzintzuntzan	*Santa Fe*—Con.	*San Andrés*
Seras.	Cuirís.	Cuanás
Zira, Cira.	Mayapeti.	Zirón daro.
Picho, Pichu.	Seja, Ceja.	Olloqui.
Cuiriz.	Nambo.	
Chichipan.	Cuín.	*Quiroga*
Huipe.		Chagolla.
Zacapu.	*San Jerónimo*	Anita.
Cuín.		Mexicano.
	Huapeo.	Cuín.
Santa Fe	Zinzún.	Huacuz.
	Picho.	Cuirís.
Huacuz.	Cuanás.	Tzintzún.
Tzintzún.		Nambo.

Disregarding Chagolla and Anita, which are quite unimportant outside of Quiroga, the over-all frequency is about as follows:

Huacuz, Huacús, Guacuz, etc.	A small eagle or large hawk.
Cuanás, Cuanaz, etc	A frog.
Tzintzún, Zinzún, Sinsún, etc.	A hummingbird.
Cuirís, Cuiriz, etc	A waterfowl of the duck family.
Seja, Ceja	Possibly not Indian in origin.
Zira,[1] Cira, Sira	Possibly not Tarascan.
Mexicano, Mexicana, Mejicano.	A Mexican Indian.
Cuín, Cuini	Any small bird.
Huapeo, Huape, perhaps Huipe.[1]	Meaning uncertain.
Olloqui	Meaning not known to us.
Chichipan [1]	Probably a Mexicano name.
Mayapeti, Mayapiti, etc	Something to do with a market.
Picho,[1] Pichu	Meaning uncertain.
Nambo	Meaning unknown to us.
Zirón daro	A marsh or swampy place.
Seras	Possibly not Indian in origin.
Zacapo, Zacapu, etc	A stone.
Cacarí, Cacaré	Stonecutter or mason.

Such names as Cuate, Xochicalli (both of Mexican origin), Hisetzen, Huacapu, Hucuja, Huacuja, Huetzen, etc.

[1] The interested reader will note some discrepancies between a number of the meanings we have listed and those given on page 233 of Foster's monograph on Tzintzuntzan. The names concerning which we do not agree are: Huipe, Zira, Picho, and Chichipan. Dr. Foster utilized etymologies provided by Pablo Velásquez, a native of Charapan in the Sierra. Our etymologies were derived from José Corona Núñez' knowledge of Tarascan language and literature, several Tarascan-Spanish dictionaries, and information locally provided. Since the Tarascan language has altered somewhat since the sixteenth century, and since the Sierra and Lake dialects differ considerably in some elements of the vocabulary, it is not possible to be absolutely certain concerning all Tarascan or supposedly Tarascan words. The reader is at liberty to accept either or reject both etymologies.

It is of interest to note that names of positive or probable Mexicano (Nahuatl) Indian origin are practically restricted to the areas of strongest Spanish and Mexican colonial settlement, namely, Tzintzuntzan and Quiroga. The names assumed to be Mexican in origin, and the possessors to be descendants of Mexican Indians, are Chagolla, Chichipan, Cuate, Mexicano, and Xochicalli.

There is yet one more source which gives us some idea concerning the ethnic composition of Quiroga. This is the civil register. During the years 1873 to 1885 it was customary to indicate nationality and race; and, with reference to those of Mexican nationality, to distinguish "Mexicano indígena" (Indian) from "Mexicano no indígena" (non-Indian Mexican). A survey of the year 1873 shows that some or all of the individuals with the following surnames were considered to be Indians: Abrego, Alvarado, Ambris, Anitan, Aparicio, Banderas, Bautista, Bonifacio, Cabrera, Chávez, Coronado, Díaz, Estrada, Fabela, Fabián, Flores, Frutos, González, Guitérrez, Heredia, Hernández, Juárez, López, Martínez, Mateo, Marcos, Mejía, Mejicano, Negrón, Olayo, Ontiveros, Peña, Pio, Ramos, Rangel, Ramírez, Román, Roque, Salmerón, Sánchez, Saucedo, Silva, Valdivia, Valdés, Valdovinos, Vázquez, and Zavala.

ETHNIC DISTRICTS

The leading Indian families of Quiroga at present are the Valdovinos, Peña, Flores, Anita, Salmerón, Mexicano, Estrada, López, Rangel, Chagolla, and Guzmán. Approximately one-half or more of the members of the first six families mentioned live in the Calvario district. Just as certain family names are predominant in the Indian element, and have a regional concentration in the recognized Indian district of El Calvario, there are certain other family names with circumscribed distribution and with ethnic connotations. In this connection one can make a tripart division of the Quiroga region. The Calvario is predominantly Indian, with secondary concentrations of Indian families in adjacent portions of *cuarteles* II and III, and in *cuartel* I which contained the old colonial Indian hospital and also comprises lands which were acquired from Santa Fe some 80 years ago. The heart of Quiroga, comprising parts of all four *cuarteles* and most of the stores

and the leading plazas, is dominated by mestizo and white families. This mestizo-white district also embraces all of *cuartel* IV and the eastern district known as the Pueblo Nuevo. Just as Indian Quiroga can be thought of as occupying the northern and western portions, so the mestizo-white zone can be said to comprise the remaining central and southern and eastern portions which contain the exits of roads leading to Morelia and Pátzcuaro and which border on the lands of the former hacienda of Atzimbo. The ranchos derived from the former hacienda (Atzimbo, Caríngaro, Icuácato, and Sanambo) make up a third recognizable division which is dominated by families of mestizo origin. There has been much intermarriage between individuals from the ranchos and from the mestizo-white division of Quiroga, and a number of essentially rancho families have become established in Quiroga during the past 80 years. On the other hand, there apparently has been very little movement from Quiroga out to the aforementioned ranchos. The remaining two ranchos can be considered appendages of two of the ethnic districts—La Tirímicua is Indian and mestizo and properly can be tied in with the Calvario district to which it is adjacent, and Zirandangacho is but an outpost of mestizo-white Quiroga with which it is connected.

The four mestizo ranchos presumably contain the descendants of the former hacienda laborers, who have acquired title to the lands of the extinct hacienda. It is known that the inhabitants are a mixture of white, Indian, and Negro, so amalgamated that the present product can best be referred to as mestizo. An aberrant element is the conspicuous presence of some gray and blue-eyed individuals, often with red or fair hair, and commonly with light or florid complexions. This is especially true of some past and present inhabitants of Atzimbo. It has been suggested that this white element is derived from the presence of French and Belgian troops in the area during the French Intervention in the 1860's. Characteristic rancho surnames are such as Barriga, Herrera, Chávez, Campuzano, Ruiz, Díaz and Díaz Barriga, and Aguilar, which are the most numerous families in the ranchos and over half of whose representatives in the Quiroga region are to be found in these ranchos. Among other families, all or more than half of whose members live in the ranchos, are the Arriaga, Magos, Milián, Olayo, Ortiz, Pineda, Ramírez, and Sierra. It is noteworthy that the leading Indian family names, such as Anita, Estrada, Fabián, Flores, Mexicano, Peña, Salmerón, and Valdovinos, are not represented in the ranchos, not even in the maiden name of a married woman. Also, such family names as Chagolla, Guzmán, López, and Rangel, which are well represented in the Indian families, have but a slight representation in the ranchos. In connection with the local concentrations of certain surnames in the ranchos or among the so-called Indians, we should consider the results of a survey of all surnames listed for sixteenth-century Spanish conquerors, colonizers, *vecinos*, *encomenderos*, *corregidores*, and the like, in New Spain. We failed to find for sixteenth-century Michoacán and its borderlands (Jalisco, Colima, Guanajuato, etc.) 75 of the 252 family names listed in the 1940 census. Thirty-one of these 75 surnames were represented in 1940 by 5 or more persons, and the most important among these were (in the order of their importance in the Quiroga region): (1) Barriga 219, (9) Campuzano 72, (14) Valdovinos 64, (23) Chagolla 48, (28) Anita 41, (36) Farías 32 (unless this name is derived from Frias), (44) Magos 25, (46) Sierra 25, (47) Olayo 24, (51) Servín 21, (54) Saucedo 20, (56) Sixtos 19, (58) Mexicano 18, (64) Villa 16, (65) Castro 14, and (68) Reyes 14. Our conclusion is that the families having such names were either Indians or else comparative latecomers.

The determination of the white or practically white population of Quiroga is quite difficult. No anthropometric study was carried out, or ever has been done, in Quiroga. Furthermore, physical anthropologic study alone, without support from genealogic records, is never sufficient. An individual may appear to be completely white in physical racial characteristics and yet he may have one or more known ancestors who were nonwhites. It is possible that, with the exception of the Italian family, there are no absolutely pure whites in the Quiroga area. On the other hand, there are a number of families with prestige and comparative wealth and education, many or all of whose representatives physically could be classed as whites. From a study of the municipal records, tax rolls, histories of Michoacán, and other sources, we have compiled a list of all the families whose members have dominated the political, economic, and social life of Quiroga during the past one hundred and

more years. These families, in alphabetic order, are: Alcaraz, Arellano, Arias, Ayala, Barriga, Calderón, Campuzano, Castañeda, Castro, Cázarez, Chagolla, Cuiriz, Domínguez, Elizarraras, Elizondo, Farías, Fuentes, Gaona, García, Gonzaga, Gutiérrez, Guzmán, Huerta, Lara, Leal, León, López, Magaña, Medina, Mendoza, Mier, Ortega, Ortiz, Padilla, Pantoja, Ponce, Robles, Rodríguez, Rojas, Sendejas, Serranía, Silva, Tellez, Tena, Torres, Tovar, Valdés, Villanueva, Villaseñor, Villicaña, and Zamudio. All of the prefectorial and municipal elective and appointive positions from 1862 to the period of agrarian dissensions in the early 1930's were held by members of these families. The bulk of the property and nearly all of the larger businesses are in the hands of these families. Only individuals from some of these families have made a name for themselves in other parts of Mexico. However, some of these families are now extinct in Quiroga; other families had their period of glory and power in the middle or latter part of the nineteenth century; and some of the families are distinctly recent in their rise to social and economic position. Among the 50-some families listed there are families of presumptive Indian origin, and a larger number are definitely mestizo racially. Nevertheless, there are a few families whose surnames have not appeared in the records as belonging to known Indian, mulatto, or mestizo families. These names will not be listed since such families are no more certain to be pure white than are many individuals who have a family name in common with Indians, mulattoes, or mestizos. It must be kept in mind, considering the various methods by which European family names were acquired by nonwhites and mixed-breeds, that all the individuals with the same family name in the Quiroga area are not necessarily related. In fact, quite the contrary is true for many family names. The only safe assumption is that, in general (considering the marked social and economic privileges which set the whites above the mestizos, and the mestizos above the Indians, during all of the colonial period and well into the period of Independence), accumulated wealth and opportunity have tended to maintain the whites and near-whites in the upper privileged class. This condition has been upset somewhat by revolutions, especially the last revolution, but the generalization probably still holds for Quiroga and for many other communities in Mexico.

Our conclusion, from the study of family names, history, and the appearance of the inhabitants, is that the population of Quiroga is essentially mestizo. There are individuals who are pure Indians or nearly so, and there are persons who are whites or practically so, but they constitute a decided minority.

GOVERNMENT

At the present time the name "Quiroga" is applied to three progressively larger political entities. The smallest is the community proper of Quiroga which has the official category or rank of *villa*, which is best translated as "town" in English. The urban community of Quiroga dominates and claims as its traditional lands a surrounding rural area in which there are six small communities known as ranchos. This area constitutes Quiroga in general, as contrasted with the town proper. Finally there is the *municipio* of Quiroga, which includes the general Quiroga area and three distinct pueblos or villages with their surrounding lands. This *municipio* is not a municipality in the ordinary American sense; rather, it is more like a township of the northern and eastern United States which may contain a number of settlements or villages. The *municipio* is constitutionally the basic political element of the Mexican States.

HISTORICAL BACKGROUND

Before we discuss the government and external relationships of the *municipio* of Quiroga, we will present a brief history of the development of governmental units in the Quiroga area and Michoacán from earliest colonial times to the present. This is given for background, and also because it is nowhere else available either in Spanish or in English.

The independent "kingdom" or state of the Tarascans (which covered more than the present State of Michoacán; see Brand, 1944) was conquered by a lieutenant of Cortez in 1522. The Tarascan capital was at Tzintzuntzan, and this city included or claimed as dependent *barrios* all the villages of the Pátzcuaro Lake Basin as well as some outside of the basin. Cortez held Tzintzuntzan and its *barrios* (which undoubtedly included Cocupao or Quiroga) as an *encomienda* from

1522 until 1527/29. A *mayordomo* represented Cortez in Tzintzuntzan and collected the tribute from the Indians. When Cortez entered a period of disgrace the members of the first *audiencia* (1528–31) seized these lands, and entered the tribute in the name of the crown (*Corona de S. M.*). The representation of royal administration and justice was in the hands of temporary *alcaldes mayores* (high constables) and *corregidores* (overseers or magistrates), with seat in Tzintzuntzan (also known as Uchichila and Michoacán) from about 1528 to 1540. The records are scanty and contradictory as to administration during this period.

In 1543 Mexico had been divided on paper into four provinces, one of which was the Provincia de Michoacán. This province did not materialize as a political unit until 1787, but its area was occupied by the bishopric of Michoacán (1536–), and the term was used popularly for the entire region. One must keep in mind that until 1787 the various *alcaldías mayores* and *corregimientos* within the so-called province of Michoacán were dependent only on the audience and viceroy in Mexico City. The highest political and judicial unit was the *alcaldía mayor*. After the 1550's we no longer read of a *corregidor* in the Pátzcuaro area. We must assume that until the establishment of the intendency in 1787, Cocupao looked to Tzintzuntzan and Pátzcuaro for administration and justice. Despite much that has been written, it is evident (Díez de la Calle, 1646; Villaseñor, 1746–48; Beaumont, 1932) that from about 1540 until 1787 Pátzcuaro was the official capital of the restricted province or *alcaldía mayor* of Michoacán. When the seat of the bishop was shifted in 1540 from Tzintzuntzan to Pátzcuaro, the seat or capital of the *alcalde mayor* also shifted from the one *barrio* of the City of Michoacán to the other *barrio*, and his title remained *alcalde mayor* of Michoacán or of Uchichila-Pascaro (combining the names of the two places). In 1576 the principal administrative and judicial functions of the *alcaldía mayor* or *provincia* of Michoacán were removed to the Spanish *villa* of Valladolid (founded 1541) which became the de facto capital. The *alcalde mayor* now took the title of Michoacán alone, or Valladolid alone, but also it appeared as Huitzizila-Pátzcuaro-Valladolid (from the three different cities known as Michoacán). The *alcalde mayor* usually resided in his de facto capital, but he appointed a lieutenant (*teniente de alcalde mayor*) who represented him in the official and nominal capital of Pátzcuaro-Michoacán. At times the residences were reversed. The *alcaldía mayor* of Michoacán was divided into a number of areas or *partidos* among which was that of the former capital, Uchichila or Tzintzuntzan, within which was the Indian village of Cocupao. Apparently descendants of the last *cazonci* or ruler of the Tarascans held the position of governor in Tzintzuntzan and Pátzcuaro, and were over the appointed governors and elected *alcaldes* or judges in the surrounding Indian villages. The tribute or taxes paid by the Indians of Cocupao went to the representatives of the crown in Tzintzuntzan and Pátzcuaro until the period of Independence, excepting for the years 1539–54 when possibly they were included in the *encomienda* of Juan Infante. (See Land Settlement, pp. 10–11).

The entire framework of administration becomes clearer with the erection of the intendency of Valladolid in 1787. This intendency had legally defined boundaries (the first in the political history of Michoacán), and all the powers of *alcaldes mayores*, and *corregidores* (which were abolished in Mexico at this time, with a few exceptions) were placed in the hands of the intendent whose capital was Valladolid. The intendency was divided into 20 *departamentos* or *partidos* or *sub-prefecturas*, among which was that of Pátzcuaro which included Cocupao. What role Tzintzuntzan played between Cocupao and Pátzcuaro is uncertain. Cocupao continued to be an essentially Indian pueblo ruled by its governor, judges, and religious officials. This pueblo exercised control over the village lands, whose boundaries were a matter of almost constant conflict with the neighboring Indian communities of Tzintzuntzan and Sante Fe de la Laguna, and with the white and mestizo owners of haciendas.

With independence in 1821, the province of Valladolid soon was converted into the State of Michoacán (1824–25). After that it alternated in title between an *estado* of a federated republic and a *departamento* of a centralized republic or empire. Since 1867 Michoacán has been a "free and sovereign" federated state. With the acquisition of statehood Michoacán was divided (1822–24) into major divisions which went under the

names of *departamento*, *distrito*, and *prefectura* and varied in number between four and seven until they were finally abolished in 1868. These major divisions were headed by prefects, appointed by the governor, who were next to the top in the hierarchy of political government. From 1822 until 1846, Cocupao oscillated between the northern department and the southern department which had its seat in Pátzcuaro; and from 1847 until 1868 (excepting for two brief periods without departments) Cocupao was in the northern department with its *cabecera* in Morelia. The old *partidos* of colonial times were continued, with some changes, from 1822 to 1917. They commonly ran in number between 14 and 22, were known variously as *partidos*, *sub-prefecturas*, and *distritos*, and until 1868 and the abolition of the prefectures or departments were headed by subprefects appointed by the prefects. Between 1868 and 1917 these divisions were referred to as *distritos*, and they were headed by prefects appointed by the Governor of the State. From 1855 to 1868 Quiroga was apparently at the zenith of its political importance. Within this period from 1855 to 1861 and 1863 to 1868, the *partido* and *distrito* of Cocupao de Quiroga was headed by a prefect or subprefect, with headquarters in Quiroga, whose administrative area embraced the *municipios* of Quiroga and Tzintzuntzan. For the brief period 1861–63 the prefect in Quiroga ruled over a *distrito* which included the two abovementioned municipalities and also those of Zacapu, Coeneo, and Huaniqueo to the west and north. Unfortunately, none of the prefectorial records for this period of greatest expansion of Quiroga have been located. During the longest period of records, 1868 to 1917, the prefect of the district of Morelia was the superior chief of Quiroga, excepting from April 28 to July 26, 1870, and again in 1875 when Quiroga was attached to Pátzcuaro.

The earliest known form of township or municipal government for Cocupao-Quiroga goes back to Indian and colonial times when Cocupao was a *barrio* or part of Tzintzuntzan-Michoacán. How long this situation obtained we do not know; but the proceedings of the 1603 congregation of Cocupao refer to one of the congregated pueblos (Sanambo) as subject to Tzintzuntzan. In addition to the general control exercised by the governor of Tzintzuntzan, the pueblo of Cocupao possessed its own set of Indian administrative, judicial, and religious officers (*gobernador*, *alcaldes*, *prioste*). Since in colonial times ecclesiastic and civil units covered the same areas (theoretically), and since Cocupao was part of the parish of Tzintzuntzan throughout the colonial period, we may assume that Cocupao did not acquire independent municipal government until shortly after independence was gained from Spain. There are indications that between 1822 and 1825, apparently in 1823, the *municipio* of Cocupao with an independent council or *ayuntamiento* came into existence. According to the State constitutions, the State congress has always possessed the power to organize and eliminate *municipios*. During the more than 120 years of existence of the State of Michoacán the number of *municipios* has fluctuated between 61 and 102. One can trace the rise and fall of population, finances, and political philosophies in these changes (e. g., 1825—90; 1831—61; 1861—79; 1868—75; 1874—61; 1887—76; and 1941—102). Quiroga has been a *municipio* without break since the 1820's, and has possessed an *ayuntamiento* all of that time excepting during the years 1837–46.

The nuclear community of Quiroga first appears in the records in 1534 as the Indian pueblo of San Diego de Cocupao. Even by that early date it was referred to as a congregation, which implies that the populations of a number of earlier settlements had been brought together to constitute the pueblo. Probably this was done between 1531 and 1534 by either the inspector Juan de Villaseñor or the *audiencia* judge (*oidor*) Vasco de Quiroga, who tried to pacify the Indians and organize the province of Michoacán which Nuño de Guzmán had ravaged and disrupted in 1529–30. On the maps published by Beaumont and by Seler, which date presumably from about the middle of the sixteenth century, there are shown (in recognizable position and spelling) the communities of Santa Fe de la Laguna, Cocupao, Zirandangacho, Cutzaro, and Huarapo (arranged in approximate decreasing order of size). One of these (Zirandangacho) and two not shown (Sanambo and Santiago) were congregated in 1603 within the lands of modern Quiroga. Huarapo is now a scarcely visible ruin on top of a nearby hill, and the *barrio* of Cutzaro has been abandoned since the last revolution. According to the *Suma de Visitas* (Paso y Troncoso, 1905) (from about the middle of the sixteenth

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century) Juan Infante held in *encomienda*, all of the island pueblos and those of the west shore of Lake Pátzcuaro, and also Purengecuaro (to be identified with modern San Jerónimo Purenchécuaro) and its dependencies Hazcuaro on a peninsula (San Andrés Zíróndaro), Serandanguacho (Zirandangacho) near the lake, Guanimao (?) between Tzintzuntzan and Tiripitio, and Cuzaro (Cutzaro) near Sante Fe and in view of the lake. Sante Fe is not listed because that was a pueblo and hospital of Indians founded by the *oidor* Quiroga about 1534. Cocupao may possibly have been included in the above *encomienda*. Through court action Quiroga, after he had become bishop of Michoacán, proved that these and other communities were *barrios* of the City of Michoacán and Infante was forced to give them up in 1554. As mentioned previously, in 1603 three villages were congregated with Cocupao. After that date they no longer appear as villages or pueblos, and at a much later date Zirandangacho and Sanambo reappear as ranchos of Tzintzuntzan and of Quiroga respectively. In the meantime the Pueblo de San Diego de Cocupao continued as a pueblo and *república de Indios* until the Mexican Republic was formed, when the Indian element of Cocupao was reconstituted as a *comunidad de indígenas* holding its lands in common. By 1852 Cocupao was easily the largest and most important community in the northern portion of the lake basin, and consequently it was elevated to the rank of *villa*, with the surname of Quiroga, which rank it still possesses.

Here it should be mentioned that only the State congress has the power to decide the official name and rank of a community in Michoacán. In general, size and wealth of the population determine the position of a community (*población*, *lugar*, or pueblo in the broad sense) within the hierarchy of pueblo, *villa*, and *ciudad*. Surnames are derived commonly from historical events and notable persons. When Michoacán became a state there were the cities of Tzintzuntzan (a city only in name), Pátzcuaro, and Valladolid-Morelia, and the town of Zamora and possibly Charo. All other settlements were pueblos, haciendas, *minerales*, and other lower and functional classifications. By 1837 Zamora had become a city, and Puruándiro, Tacámbaro, Uruapan, and Zitácuaro were *villas*. The next advancement to town class within the State was that in 1852 of San Diego de Cocupao, Villa de Quiroga. After that, especially 1858 to 1862, there were many promotions. We may logically assume from the above evidence that about a century ago Quiroga was the eighth or ninth most important place in Michoacán. It is claimed locally that the great liberal and martyr governor of Michoacán (Melchor Ocampo, who provided the state its surname in 1861) often met with his liberal associates in pleasant Cocupao to plan political and sociological reforms, and partly because of pleasant memories of "liberal" Cocupao he threw the weight of his governorship to support the advance in rank. Cocupao derived its surname from the great *oidor* and bishop Don Vasco de Quiroga. Although Quiroga may have made the first congregation of Cocupao, he is better known as the founder and defender of neighboring Santa Fe de la Laguna, which village was Cocupao's bitterest enemy throughout the colonial period. Ironically enough, in the title of 1534 Quiroga was enjoined from disturbing or taking lands away from Cocupao (" . . . y que no venga Señor Don Vasco de Quiroga a quitar las tierras a estos naturales de San Diego Cocupa"). Examples of other surnames in the region are: Pueblo de Coeneo to Villa de la Libertad in 1858, Villa de Uruapan to Ciudad del Progreso in 1858, Pueblo de Zacapu to Villa de Mier in 1859, Población de Tzintzuntzan to Ciudad Primitiva de Tzintzuntzan in 1861, Pueblo de Huaniqueo to Villa de Morelos in 1861, and Pueblo de Cuitzeo to Villa del Porvenir in 1861. Sometimes the entire earlier portions of the name became lost, as in the case of (San Diego Cocupao de) Quiroga, and Santa Clara de los Cobres (later Santa Clara de Portugal) which is now Villa Escalante. More often, the surname is used only officially, as in Zacapu de Mier and Coeneo de la Libertad.

The Municipio de Cocupao, according to the Martínez de Lejarza report (1824), originally contained the Pueblo de San Diego de Cocupao, the two dependent pueblos of San Jerónimo Purenchécuaro and San Andrés Zíróndaro, and four dependent haciendas and five dependent ranchos (not named). By 1831 (by legal record), and as early as the 1820's (from various implications), the Pueblo of Santa Fe de la Laguna was added to the group. This comprehension, which is essentially that of today, continued without change until May 7, 1874, when Tzintzuntzan and its dependencies were added to the *municipio*.

Practically all of the time from 1822 until 1874 the Municipio de Tzintzuntzan had embraced the pueblos of Ihuatzio and Cucuchucho and dependent haciendas and ranchos on the Gulf of Ihuatzio side of the peninsula of Tariácuri, but only Tzintzuntzan and associated communities just to the south and east of Quiroga were transferred in 1874. The remainder of the old Municipio de Tzintzuntzan was attached to Pátzcuaro until the *municipio* was reconstituted in 1930. Because Cocupao-Quiroga was a dependency of Tzintzuntzan in colonial times, and because northern Tzintzuntzan was a dependency of Quiroga during most of recent time (1874–1930), there is some uncertainty concerning the original (pre-1874) status of some of the dependent ranchos. Furthermore, there never has been a law or official demarcation of the exact boundaries of the *municipios* and their dependent *tenencias*. The national statistical code of 1889 required that every *municipio* possess in duplicate a map of its territorial extension, and also the measurements of all private properties, but no such map for Quiroga has been located. Also, the municipal records show that in 1895 a "Plano de la Villa de Quiroga," which had been requested by the Government in Morelia in 1892, was completed, but this also has been lost. Presumably the secretary of the municipal council of Quiroga made a rough sketch map of the extent of the *municipio* in 1945 which was sent to Morelia, but even that map could not be located in the governmental offices. Whenever the State government makes a change in the area of some political unit it does so by naming the communities affected, and the exact boundaries are left to local knowledge, tradition, and claims. Very seldom are there mutually agreed upon boundaries between *municipios* or between any two adjoining constituents of a *municipio*, and practically never will one find jointly accepted boundary markers or fences. Practically speaking, if a man owns property on a disputed boundary that property is considered to belong to the entity in which he resides and pays taxes. In just this fashion, because of changes in ownership of properties, the Villa de Quiroga and its *municipio* have advanced southward at the expense of Tzintzuntzan and the rancho of Patambicho. In the 1870's Tzintzuntzan claimed lands right up to the Calle Nacional exit from the Villa de Quiroga, but now the boundary is considered to be one or another of two streams that flow into Lake Pátzcuaro near Patambicho.

The exact boundaries of Quiroga and its ranchos are discussed in the section on Land Settlement (pp. 23–25). Here we will give merely a listing of the relationships of these ranchos during the past century. Unfortunately we do not possess a list of the ranchos and haciendas prior to the 1860's. In 1869 El Tigre, Atzimbo, Zirandangacho, Patambicho, and Cuenembo belonged to Tzintzuntzan, while Icuácato, Sanambo, Caríngaro and La Tirímicua belonged to Quiroga. By 1910 Quiroga had acquired El Tigre, Atzimbo, Zirandangacho, and also Las Pilas (which lies east of Cuenembo). After the separation of Tzintzuntzan in 1930, Quiroga retained its original four ranchos (one had been "lost" since the five reported in 1822), and also Atzimbo and Zirandangacho (which may have been the fifth rancho of Martínez de Lejarza). Since the parish records indicate that Atzimbo and Zirandangacho were not part of the *curato* of Quiroga when it became independent of Tzintzuntzan in 1853, these two ranchos seem to be definite acquisitions of the past 100 years. In summary, it seems that the pueblos of Santa Fe, San Jerónimo, and San Andrés have been *tenencias* of Quiroga throughout the independent Mexican period, and that all the dependent ranchos (with the exception of Atzimbo and possibly Zirandangacho) have been a part of Quiroga since some date in the colonial period.

Two other types of jurisdiction have had areas that coincided fairly closely with those that we have just outlined. These are the judicial and the fiscal. Indian and ordinary *alcaldes* or judges carried out local judgment during the entire colonial period, and first appeal was made to the *alcalde mayor* or his lieutenant in Pátzcuaro. During the period of the intendency, with the abolition of the *alcaldía mayor*, appeal was to the senior or first *alcalde* in Pátzcuaro. After 1822 and until 1863 the *juez letrado de primera instancia* constituted the court of major jurisdiction and appeal in Pátzcuaro, to which cases were carried from the elected *alcaldes* or *jueces de paz* in Quiroga. After 1863 Quiroga turned to the judge of first appeal in Morelia, excepting for brief periods in 1867, 1870, and 1875. From 1868 until 1917 the areas of the political-economic *distritos* were the same as those of the judicial districts, and the number of the *juzgados de primera instancia* varied

between 15 and 17. Although the political-economic district was abolished in 1917, the judicial districts still obtain.

During the colonial period the Indian population of Quiroga paid their taxes in the form of assessed tribute to the representatives of the *encomenderos* and of the crown in Tzintzuntzan and Pátzcuaro. In 1824 Michoacán was divided into 10 taxation regions, 1 of which had headquarters in Pátzcuaro. In 1831 these head tax offices or *administraciones de rentas* were given the right to collect all forms of State taxes including excise taxes on tobaccos and other items covered by the *alcabala*. Under the head office were several branch offices known as *receptorías* or *cabeceras de secciones rentísticas*. By 1843 a *sección rentística* had been established which included all of the modern *municipios* of Quiroga and Tzintzuntzan, and which had its headquarters or *receptoría* in Cocupao-Quiroga. Such an arrangement has continued to the present with but few changes. For a brief period 1860–63 Quiroga was the seat of an *administración subalterna de rentas*, and in 1862–63 Quiroga constituted a *distrito rentístico*, during all of which period the area covered included the *municipios* of Quiroga, Tzintzuntzan, Coeneo, Zacapu, and Teremendo (=Huaniqueo?). At present the *receptoría* in Quiroga is the headquarters of the second taxation section within the Pátzcuaro tax district, and a *sub-receptoría* exists in Tzintzuntzan.

From the historical outline given above it is apparent that Quiroga has gradually developed from a small Indian community, dependent upon Tzintzuntzan and Pátzcuaro in nearly all matters of government, to a position of importance and comparative independence. Also, there has been a general trend away from Pátzcuaro and toward Morelia. Where formerly Quiroga was dependent upon Pátzcuaro politically, judicially, and fiscally, Quiroga is now a municipality responsible only to the State government in Morelia, although fiscally Quiroga is in the Pátzcuaro orbit and judicially in that of Morelia. (Only a few of the more important sources for the historical résumé are listed in the Bibliography. To document the foregoing pages adequately would require a bibliographic essay covering many pages. Such an essay has been worked up in connection with the historical part of our report on Quiroga, from which history we have summarized portions of several chapters.)

MUNICIPAL GOVERNMENT

The Municipio de Quiroga is one of the 102 *municipios* (which we will term municipalities, but which are more like townships) into which the State of Michoacán is now divided. As a *municipio* it is, by National and State constitutions, a basic political unit next in order below the State. The municipality governs itself according to the regulations provided by the State congress, in conformity with the modified National and State constitutions of 1917. The most recent law regulating municipalities is the *Ley de Gobierno Municipal* published in Morelia, December 18, 1941.

The municipality of Quiroga is represented and administered by an *ayuntamiento*, selected by popular direct vote, which resides in the Villa de Quiroga. The *ayuntamiento* consists of five *regidores* or *munícipes* who are elected for a term of 2 years. The municipality is divided into five electoral precincts, which are numbered from one to five, and each precinct or *sección* elects one of the *regidores*. A portion of the *ayuntamiento* or council is renewed each year. On the odd years three places are contested, and on the even years two places are subject to vote. Precincts vote in any given year according to whether their number is odd or even; e. g., in 1945 precincts 1, 3, and 5 elected *regidores*. To be a *regidor* it is not necessary to reside in the precinct electing; but the person must be a male citizen of Michoacán, possessed of full civil and political rights, born in the *municipio* or resident at least one full year previous to the election date, able to read and write, and not a State or Federal employee or in active military service. Also, among individuals who cannot be elected *regidor* are such as persons convicted of a major (nonpardonable) crime, those interested in municipal contracts, employees of the council, etc.; and not more than one person from any partnership or family group can be on the council at the same time. An examination of the records shows that some of the regulations have not always been observed; e. g., there have been *regidores* who could not write, individuals not resident in the area, members of the military, and two members of a family group on the council

at the same time. Ever since 1869 substitutes or *suplentes* have been elected at the same time as the regular or proprietary municipal officials. This was because of the frequency of absences. Such neglect of duty can be attributed to the fact that the office of *regidor* is honorary, obligatory, and without pay, although small remuneration may be received for work on special commissions. The substitute serves whenever his proprietary opposite is temporarily or permanently absent.

Theoretically most *municipios* are allowed one *regidor* for each 1,000 population, but if the total population exceeds the maximum number of *munícipes* allowed by law (5 in the case of Quiroga), the precinct boundaries must be adjusted so that the population is more or less evenly distributed in as many precincts as there are allowable *munícipes*. The boundaries of the electoral precincts are determined by an electoral council (whose make-up will be discussed later). Presumably the electoral council can indulge in considerable gerrymandering. An examination of the incomplete data pertaining to electoral precincts shows that there have been many shifts and recombinations. The *secciones* set up for the 1943 election of a Federal congressman (*diputado federal*) were: Sec. 1, *cuarteles* I and II of Villa Quiroga and ranchos Icuácato, La Tirímicua, and Zirandangacho; Sec. 2, *cuarteles* III and IV of Villa Quiroga and ranchos Atzimbo, Caríngaro, and Sanambo; Sec. 3, Pueblo de Santa Fe; Sec. 4, Pueblo de San Jerónimo; Sec. 5, Pueblo de San Andrés. This can be compared with the make-up of Sec. 4, a few years earlier, which was *cuartel* IV of Villa Quiroga and the ranchos Atzimbo, Icuácato, La Tirímicua, and Sanambo, while Sec. 1 comprised only *cuarteles* I and II of Villa Quiroga, Sec. 2 was *cuartel* III of Villa Quiroga and rancho Caríngaro, Sec. 3 consisted of the pueblos of San Andrés and San Jerónimo, and Sec. 5 was the Pueblo de Santa Fe.

ELECTION PROCEDURE

The direct popular vote is used for the election of *munícipes*, State *diputado* and governor, Federal *diputado* and *senador*, and (until recently) the local judges or *jueces menores*. Male residents or *vecinos* of the municipality have the right to vote if they are Mexican citizens with full civil and political rights (not major criminals, habitual drunkards or vagrants, outlaws, and the like), and are 21 or more years of age (18 if married). Thirty days before any election the electoral council must post in some public place a printed or typed list of all residents with right to vote in that election. During the next 25 days names may be challenged and the list can be corrected. These lists are based on the general census which is made by the electoral council once every 2 years, and which is kept up to date by a variety of means. The judge of the civil registry must send to the council every 3 months the names of all who have acquired the right to vote by marrying or becoming 21 years of age, and also the names (with sex and age) of all who have been born or who have died; the president of the *ayuntamiento*, chiefs of quarter and of block, et al., must send in the names of all citizens who have moved; and persons who have changed address also must notify the council. Both the general census and the electoral list must provide the following data: Name, age, status as to marriage, occupation, literacy, address. At least 3 days before the election a notification and credential of voting must be delivered to each qualified voter. This credential carries the name of the voter, the number of his ballot, the date of the proposed election, the purpose of the election, and the location of the voting center or table (*mesa*) to which the voter should report. All elections are held on Sunday, and between the hours of 9 a. m. and 5 p. m. When the voter appears at the voting center he exchanges his credential for a numbered ballot from each party having a candidate, and for a blank ballot in case he should wish to write in the name of an unregistered candidate. Then the voter selects the ballot of the party of his choice (or writes in on the blank ballot), doubles it and hands it to an official who deposits it in the vote container (*anfora*), and destroys the other ballots. Voters enter the voting place or *casilla* (booth), and vote one by one. As indicated above, each contesting party has its own printed distinctive ballot (*cédula* or *boleta*) upon which appear instructions for voting, the name and colored symbol of the party, the names of the party's candidates, and a space for the voter's number. A note at the bottom informs the voter that the number of his ballot will be used in the counting of the votes. The use of distinctive colored symbols by the various parties

probably derives from the fact that so many people cannot read, but propaganda has acquainted them with the symbols and colors of the various parties. It is possible that the use of the ballot number might provide interested parties with the means for determining how individuals have voted.

During the voting there have been present a president of the voting place, two secretaries, and two inspectors, who were selected by lot from slates presented by each party to the electoral council. After the polls close, all unused ballots are destroyed, the votes are tabulated, a record of the proceedings is drawn up and signed by the voting officials, and all the ballots and accompanying papers are made into a well wrapped and sealed package which is signed by the officials. Representatives of the contesting parties are present. The Wednesday after election day, the presidents of the various voting places meet to verify the returns from the individual polls and to certify the candidates who gained a majority. Before the end of 10 days this verification board must complete its work (ties are decided by lot), make up all the ballots and papers into a sealed package, and deliver it to the electoral college. In the case of municipal elections, the *ayuntamiento* constitutes the electoral college. The day after receiving the *expediente* the *ayuntamiento* passes on the vote and declares the winners. Ordinarily, elections for *munícipes* are held on the first Sunday in December, and the successful candidates take office the following 1st of January.

POLITICAL PARTIES

The electoral council which sets up the election machinery in each *municipio* is made up of one representative from each registered political party, appointed by the party for a term of 2 years. This council is organized with a president, a secretary, and one or more ordinary members. There must be at least three members, and any lacks are made up by appointments made by the president and the syndic of the *ayuntamiento*. During 1944 and 1945 the president was Manuel Fuentes Ramírez, and the secretary was Salvador Fuentes V. For a number of years until recently (since we left Quiroga) there was only one registered party in Quiroga—the Government or Revolutionary party (formerly PNR and PRM, now PRI). A registered party must represent a notarized assembly of at least 100 citizens; must have a directive board; may not have a religious name or represent any specific race; and must register its candidates with the electoral council at least 20 days prior to each election. In Quiroga there is a municipal committee of the Revolutionary party, the members of which are selected by a majority of the local members of the party. In the days when there was no other legal and registered party in Quiroga, competition was afforded by the three great sectors into which the national party is divided: Sector Agrario (Campesino) or rural workers, Sector Obrero or urban workers, and Sector Popular which includes the merchants, proprietors, industrialists, clerks, and the like. Actually the division tended to be dual, in which the town opposed the country, the landed were against the landless and the *ejidatarios*, the "whites" vied with the "Indians," the lower part of town or "El Centro" contended with the upper town or "El Calvario," and the *sinarquista* Roman Catholics were against the agrarian agnostics and atheists. From the beginning of modern constitutional government in 1917 until 1934 the Sector Popular (or its equivalent before the Sector Popular was formally incorporated into the Revolutionary party) controlled the *ayuntamiento*. Growing in part out of the resentments and disorders occasioned by the activation of the agrarian *ejidal* program 1929/32–, the political turmoil became so aggravated that the State government was forced to impose the municipal government 1934 to 1938. From 1938 through 1945 the Sector Campesino or Agrario was dominant, although members of the Popular and Obrero sectors were represented on the *ayuntamiento*. In 1946 the Sector Popular came into control again. By this time a second registered party had entered the scene—the conservative and religious (that is, proclerical) Partido de Acción Nacional, commonly known as PAN. This party drew support from the more devout Catholics, within all three sectors of the PRI, who were not in sympathy with the anticlerical attitude of that party. Also, the strong group of Sinarquistas (not yet organized as a registered political party) threw their support to the PAN slate of candidates presented for the

elections of December 1946. As a result, the *ayuntamiento* of 1947 was dominated by members of the PAN. Although the State governor refused to recognize the PAN *ayuntamiento*, and tried to install a competing PRI *ayuntamiento*, apparently the majority of the inhabitants of the *municipio* of Quiroga have backed the duly elected group.

THE AYUNTAMIENTO

The two or three new *regidores* meet privately, not later than December 20, with the three or two *regidores* who will continue the ensuing year, and by secret ballot the five *munícipes* select from among themselves a president and a syndic. On the following 1st of January the new *ayuntamiento* is installed in office, and the outgoing president reports on his term of office. On the same day the new *ayuntamiento* designates by majority vote a secretary and a treasurer (not of their group). The five *regidores* or *munícipes* constitute the true and complete *ayuntamiento* or township council. This council nominates the two judges or *jueces menores*, who are often popularly considered to be a part of the *ayuntamiento* (as once they were in fact), but they and their secretary are more properly to be considered as adjuncts of the *ayuntamiento*. The *ayuntamiento* meets in the municipal building, locally termed Palacio Municipal, and is required by law to meet at least once a week, and to keep minutes of each meeting. Actually, there may not be more than a meeting every 2 or 3 months. According to the minutes, there were meetings in 1941 on January 1, April 7, June 18, August 10, and December 12, 16, 28, and 31; in 1942 there were meetings January 3, 10, and 13, April 28, May 23, June 20, August 4 and 6, November 24, and December 10, 14, and 28; and in 1943 there were meetings January 1, 4, 11, 18, and 28, February 10, March 15, April 26, May 27, June 11, 12, and 17, July 6, August 3 and 9, October 21 and 29, and December 12, 15, and 29. A loose sheet inserted in the book for 1943 carried a typed statement that no minutes were kept of four of the meetings in that year. The sessions of the *ayuntamiento* are public unless two-thirds or more (so the law reads!) of the *regidores* vote for a secret or closed meeting.

Although the present number of *regidores* is five, the number to which the *municipio* of Quiroga has been entitled has ranged as high as 12, and during much of its history was 7. When we began work in Quiroga the *ayuntamiento* for 1945 was composed as shown in table 21. The elections of December 2, 1945, in the three odd-numbered sections resulted in victory for the Sector Popular in two of the three precincts. The resultant *ayuntamiento* during 1946 is also shown in table 21.

TABLE 21.—*Composition of ayuntamiento in 1945 and 1946*

1945

Name	Section	Date elected	Party	Residence	Comments
Prop. Leopoldo González Leal	1	Dec. 5, 1943	Campesino	Quiroga	Shot to death (accidentally, it is said) Dec. 29, 1944.
Sup. Manuel Huacuz	1	do	do	Santa Fe	
Prop. Onésimo Calderón	2	Dec. 3, 1944	do	Quiroga	Resigned.
Sup. Venancio Cuiriz	2	do	do	Santa Fe	
Prop. Heliodoro Anita Val	3	Dec. 5, 1943	do	El Calvario	President.
Sup. Feliciano Gabriel M	3	do	do	Santa Fe	
Prop. J. Encarnación Medina F	4	Dec. 3, 1944	Popular	Centro	Syndic.
Sup. Alberto Tovar A	4	do	do	do	
Prop. Daniel Coria	5	Dec. 5, 1943	Campesino	Went to U. S. as "bracero."	
Sup. Juan González V	5	do	do	San Andrés	

1946

Prop. Manuel Fuentes Torres	1	Dec. 2, 1945	Popular	Centro	
Sup. Gilberto Romero Fuentes	1	do	do	do	
Sup. Venancio Cuiriz	2	Dec. 3, 1944	Campesino	Sante Fe	
Prop. Ubaldo Chávez	3	Dec. 2, 1945	Popular	Centro	Syndic.
Sup. Salvador Barriga	3	do	do	do	
Prop. J. Enc. Medina Fuentes	4	Dec. 3, 1944	do	do	President.
Sup. Alberto Tovar A	4	do	do	do	
Prop. Amador Peña Valdovinos	5	Dec. 2, 1945	Campesino	Calvario	

In connection with the election of December 2, 1945, we noted that in one polling center of section 1, only 42 persons voted out of the 174 qualified voters. This can be compared with the 30 who voted in section 2 on December 3, 1944, out of 357 who were eligible.

Some earlier *ayuntamientos* were:

1944

1. Leopoldo González Leal
2. José Calderón Márquez (Syndic)
3. Heliodoro Anita Val. (Pres.)
4. Indalecio Chagolla Estrada
5. Daniel Coria

1943

1. Amador Peña Valdovinos
2. José Calderón Márquez
3. J. Encar. Medina Fuentes (Syndic)
4. Indalecio Chagolla Estrada (Pres.)
5. Jesús González Villanueva

1942

1. Amador Peña Valdovinos (Pres.)
2. Diego Fuentes Barriga
3. Leopoldo Estrada Torres (Syndic), replaced by *suplente* J. Encar. Medina F.
4. Doroteo Barajas, died, replaced by *suplente* Heliodoro Anita V.
5. Antonio Zúñiga, replaced by *suplente* Jesús González V.

The State government has defined a considerable list of rights and duties of an *ayuntamiento*. These various functions are to be exercised by the *ayuntamiento* as a whole, or may be delegated to individual *regidores*, municipal employees, special municipal commissions, and the representatives of the municipal government in the descending hierarchy of governmental units. These governmental units fall into four ranks or classes below the Villa de Quiroga which is ruled directly by the *ayuntamiento* resident there. The three dependent pueblos and their respective lands are termed *tenencias* or *secciones*, and in each there is a *jefe de tenencia* who may be appointed for 1 year by the *ayuntamiento* unless the pueblo requests the right to elect him. These three *tenencias* have existed as such during all of modern history; but the title sometimes has been *Jefatura de Policía*, and the representative of the *ayuntamiento* has gone by such names as *alcalde* and *jefe de policía*. In the settlements (*poblaciones*) of lesser rank than pueblo there are *encargados del orden* who are appointed by the *ayuntamiento* or elected on request of the community. In Quiroga there are six ranchos, each with its *encargado del orden* who is commonly appointed. Beginning with a law of 1827, all settlements are supposed to be divided into *cuarteles* or quarters, and the *cuarteles* into *manzanas* or blocks. Usually this is done only in the pueblos and settlements of higher rank. Formerly each quarter had its chief (*jefe de cuartel*), but this no longer is officially required. At the bottom of the hierarchy is the *manzana* with its appointed *jefe*. As is shown elsewhere, the number of *manzanas* varies considerably within any period of several years, and often a scantily populated block will have the same chief as a neighboring block. The principal duties of the *jefes de tenencia*, *encargados del orden* and *jefes de manzana* are to look after pertinent roads, bridges, signs, and the like; maintain the public order; see that their areas are kept clean, sanitary, and sightly; and provide requested statistical information.

Among the principal duties of the *ayuntamiento* are (arranged in the order of mention in the pertinent law):

1. To foment education, higher wages, greater production, sports, improvement of livestock, and small industries; and to guard lands, pastures, and woods.
2. To look after public services.
3. To invest properly the income from the civil register in improving the cemetery and other items pertaining to the civil registry.
4. To make rules for the interior government of the *municipio*, and create the necessary offices and departments.
5. To administer the treasury according to the allowances made by the State congress in its budget, and collections made in conformity with the "Law of Municipal Finance."
6. To recommend to the State governor expropriations for sites of hospitals, schools, markets, etc.
7. To list real estate belonging to the municipality with the State cadastral and general auditor of accounts offices.
8. To combat alcoholism, delinquency, vagrancy, and begging; and to found or foment the establishment of night rests, public cafes, maternity homes, orphanages, old-age homes, technical schools, etc.
9. To foment tourism and the sales of regional products.

10. To guard and regulate good manners and morals at public spectacles; and to prevent the showing of theatrical acts and movies not previously authorized.
11. To preserve and respect the right of thinking, including its oral and written expression.
12. To examine and pass on plans for new buildings so as to insure that the buildings are safe, hygienic, and in accordance with local architectonic style.
13. To divide the settlements into quarters and blocks.
14. To determine and post the names of streets, and to number the houses and public buildings.
15. To provide, to the greatest possible extent, drinking water, drainage, electric lights, etc.
16. To prepare, for presentation to the State congress, an estimate of income and expenditures for the succeeding year.
17. To keep municipal statistics and to provide data whenever so requested by the State or the Federal Government.
18. To install, in the center and at the exits of towns, signs with the name of the community and the distance in kilometers to the next.
19. To organize civic, patriotic, and cultural programs.
20. To draw up a census of children of school age.
21. To publish a monthly statement on the condition of the municipal treasury.
22. To see that children go to school (public).
23. To organize the municipal police or security force.
24. To check the quality of drinks and foods sold.
25. To look after public squares, markets, parks, slaughterhouses, gardens, jails, and cemeteries.
26. To protect and foment agriculture, industry and commerce—provide seeds for experiment, sponsor fairs, make plantations of trees, study the natural resources (flora, fauna, minerals), etc.
27. To combat drugs of the opium group, marihuana, and alcoholism.
28. To foment cooperative societies.
29. To cooperate with State and Federal forestry officials; promote reforestation, put out forest fires, regulate the use of the woods, etc.

Obviously, many of the items mentioned are not necessary, feasible, or appropriate in a small *municipio* such as is Quiroga. Furthermore, municipal activity in most lines represents the personal interests of the *munícipes* or strongly organized opinion among the influential citizens of the area.

Specifically, the *ayuntamiento* may not collect excise taxes (*alcabalas*), act in a judicial capacity, create imposts without permission of the State congress, spend for purposes not specified in the budget, grant permission to build in public areas or places, or meddle in the *ejidal* administration or that of the Indian community. The last clause would seem to set up a municipality within a municipality, with respect to the Comunidad Indígena de Quiroga which is also the *ejidal* element in Quiroga.

THE MUNICIPAL PRESIDENT

The *regidor* selected as *presidente* of the *ayuntamiento* is the municipal president and approximates a mayor in some cities of the United States. Since his term of office, as a *regidor*, is for 2 years, often the same man will be president for two consecutive years. Neither he nor any of the other *regidores* may be reelected until at least 1 year has elapsed. The president must hold public audience daily. He is the one who grants permits for public meetings, as well as many other types of permits. In addition to convening the cabildo or meeting of the *ayuntamiento*, and presiding over its deliberations, the president has the primary responsibility for the carrying out of all the functions of the *ayuntamiento*. Also, it is specifically stated that he must maintain a brand or patent book (Registro de Fierros, Marcas y Señales) in accordance with the livestock and finance laws, call on people to help put out fires, see that the municipal archives are kept in good order, and serve as Honorary Judge of the Civil Status (Civil registry of births, marriages, and deaths) if no special functionary is present.

In earlier years the position of municipal president went to one of the most respected and (commonly) wealthiest men of the community, and never went to a resident of one of the pueblos or ranchos, or to a member of the Comunidad Indígena in the upper or Calvario part of Quiroga town. This has not been true since the revolution, and especially during the past 14 or 15 years. For its genealogic, sociologic, and political values, we have compiled a list of the presidents since 1862. There is no single source, and some complete gaps in the record exist. From the minutes or *actas* of the *ayuntamiento*, and from the various books, papers, and credentials that the president had to sign, we were able to obtain the names of nearly all the presidents.

Prefectorial Period, 1855–68 [1]

1862. Prefect: José María Rojas.
1863. Prefect: Juan Arellano. President: Francisco Castañeda and José María Domínguez.
1864. Subprefect: Juan Arellano. President: Francisco Castañeda, Primo Serranía, Joaquín Valdés, Rafael Cuiriz.
1865.
1866.
1867. President: José María Rodríguez, Rafael Calderón Cervantes, Francisco Lara, Francisco Gutiérrez, Francisco Robles, Gerónimo Ponce, Marcos Villanueva.
1868. President: Marcos Villanueva and Francisco Castañeda.

Unsettled Period, 1869–76

1869. Octaviano Valdez, José María Torres Navarrete.
1870. José María Rojas, Urbano Alcaraz, Camilo García.
1871. Camilo García, José María Torres Navarrete, Rafael Calderón Cervantes.
1872. Jesús Villanueva Barriga, José María Rojas.
1873. Sixto León, José María Valdés, Primo Serranía, Francisco Lara.
1874. Rafael Arellano, José María Rojas.
1875. Antonio Torres Leal, Gerónimo Ponce, Cesareo Rojas, Joaquín Valdés.
1876. Rafael Arellano, Trinidad Valdés, José María Rojas.

Pax Porfiriana, 1876–1910 [2]

1877. Sixto León, Cesareo Rojas, Joaquín Valdés, Jesús Villanueva Barriga, Nestor León.
1878. Trinidad Valdés, Nestor León.
1879. Trinidad Valdés, Juan E. Calderón Pureco.
1880. Juan E. Calderón Pureco, Nestor León, Trinidad Valdés.
1881. Trinidad Valdés, José María Rojas.
1882. José María Rojas, Jesús Villanueva, Nestor León, Trinidad Valdés, Sixto León.
1883. Francisco Domínguez, Sixto León, Cesareo Rojas, Jesús Villanueva.
1884. Primo Serranía, Isidoro Gutiérrez, Antonio Calderón Pureco.
1885. Trinidad Valdés, Basilio Campusano.
1886. Sebastián D. Ortega, Isidoro Gutiérrez, Nestor León.
1887. Trinidad Valdés, Primo Serranía, Luis Torres Mendoza, Rafael Calderón Cervantes.
1888. Isidoro Gutiérrez, Dr. Victoriano León Ponce de León, Antonio Calderón Pureco.
1889. Trinidad Valdés, Primo Serranía, Isidoro Gutiérrez, Antonio Calderón Pureco.
1890. Isidro Calderón, Gregorio F. Cendejas, Trinidad Valdés.
1891. Isidro Calderón, Nicanor Tovar, Francisco Domínguez.
1892. Lic. Francisco Torres Mendoza, Isidro Gutiérrez, Francisco Domínguez, Juan E. Calderón.
1893. Silviano Valdés, Lic. Francisco Torres Mendoza, Rafael Gaona, Dr. Victoriano León Ponce de León, Nicanor Tovar.
1894. Isidro Calderón, Juan E. Calderón, Odilón Tovar.
1895. Antonio Torres Leal, Silviano Valdés, Lic. Francisco Torres Mendoza, Nicanor Tovar, Rafael Gaona.
1896. Justo Campusano Nares, Isidro Calderón, Odilón Tovar.
1897. Francisco Gutiérrez Silva, Melesio Padilla, Juan E. Calderón, Francisco Domínguez.
1898. Isidro Calderón, Apolonio Valdés, Odilón Tovar.
1899. Justo Campusano Nares, Isidro Calderón, Lic. Francisco Torres Mendoza, José María Domínguez Guzmán.
1900. Nicanor Tovar, Apolonio Valdés, Francisco Elizarraras, Prisciliano Chagolla.
1901. Nicanor Tovar, Odilón Tovar, Isidro Calderón, Antonio Calderón Pureco, Lic. Francisco Torres Mendoza, Apolonio Valdés, José María Dominguez Guzmán.
1902. José María Domínguez Guzmán, Isidro Calderón, Apolonio Valdés, Dr. Victoriano León Ponce de León, Luis Torres Mendoza, Lic. José Trinidad Ponce de León.
1903. Lic. José Trinidad Ponce de León, Dr. Victoriano León Ponce de León, Luis Torres Mendoza, Odilón Tovar, Isidro Calderón.
1904. Isidro Calderón, Lic. Francisco Torres Mendoza, Dr. Victoriano León Ponce de León, Pedro Gaona Torres.
1905. Pedro Gaona Torres, Luis Torres Mendoza, Gerónimo Ponce, Odilón Tovar, Isidro Calderón.
1906. Silviano Valdés, Luis Domínguez León, Lic. Francisco Torres Mendoza, Rómulo Villanueva, Jesús Villanueva Tovar, Nestor León.
1907. Nestor León, José Jesús Barriga Torres.
1908. Nestor León, Dr. Jesús García Pita, José Jesús Gutiérrez (not a native), José Vincente Calderón.
1909. José Jesús Gutiérrez, José Vicente Calderón, José Tena Ortiz (a native of Cuitzeo).
1910. José Tena Ortiz, Lic. Francisco Torres Mendoza, Dr. Victoriano León Ponce de Leon, Juan Francisco Padilla.

Period of the Revolution, 1910–17

1911. Juan Francisco Padilla, Federico Villanueva Ortiz, Dr. Jesús García Pita, Lic. Francisco Torres Mendoza, Apolonio Valdés, Gerónimo Ponce, Luis Torres Mendoza.
1912. Luis Torres Mendoza, Gerónimo Ponce, Apolonio Valdés, Narciso Arias, Primitivo Elizondo, José María Domínguez Guzmán, José Vincent Calderón.

[1] During these years, and for many years to come, several to all of the members of the *ayuntamiento* would serve a part of the year as president and were known as *presidente en turno*. Also, some served temporarily in the absence of the elected president. Beginning at some uncertain date, *ayuntamientos* and presidents took office on the 16th of September. Apparently about 1917 presidents began to be elected for the entire year, and the *ayuntamientos* were installed on the 1st of the calendar year.

[2] All but two of those listed were natives of the Quiroga area, and all were residents of the lower town or "El Centro."

1913. José María Domínguez Guzmán, Dr. Jesús García Pita, Salvador Castro, Luis Torres Mendoza, Jesús Mier Corral, Francisco Ayala, Narciso Arias.
1914. Narciso Arias, Angel Mier Estrada, Rómulo Villanueva, Ramón Fuentes y Fuentes, Jesús Mier Corral, Francisco Ayala, Pedro Fuentes Silva, Secundino Campuzano Nares.
1915. Pedro Fuentes Silva, Secundino Campuzano Nares, Luis Gonzaga Torres, Jesús Mier Corral, Luis Lopes and Jesús Telles (the last named was the first "stranger" and the first president who could not write).
1916. Jesús Telles, Ausencio Pantoja, Severiano Fuentes, Diego Fuentes Ayala, Pedro Fuentes Silva.
1917. Pedro Fuentes Silva, Diego Fuentes Ayala, Marcelino Gutiérrez, Felipe Magaña, Alfredo Arias.

Carranza–Obregón–Calles Period, 1918–34

1918. Diego Fuentes Ayala (Sector Popular).
1919. Macario Farías, Federico Villanueva Ortiz, Salvador Huerta Ayala (all Sector Popular).
1920. Salvador Huerta Ayala (Sector Popular).
1921. Salvador Villicaña Torres, Luis Gonzaga Barriga (both Popular).
1922. Ramón Fuentes y Fuentes (Sector Popular).
1923. Ramón Fuentes y Fuentes, Marcelino Gutiérrez (both Popular).
1924. Onésimo Chagolla Vernal (Sector Popular).
1925. Onésimo Chagolla Vernal (Popular).
1926. Diego Fuentes Ayala, Manuel Fuentes Ramírez, Francisco Ayala Torres, Luis Gonzaga Torres (all Sector Popular).
1927. Efrén Chagolla (Popular).
1928. José Jesús Guzmán Carrillo (Popular).
1929. Salvador Huerta Ayala, Pedro Goana Torres, Francisco Chagolla Vernal (all Sector Popular).
1930. Francisco Chagolla Vernal, Francisco Ayala Torres, Eustorgio Fuentes (all Popular; but the State governor removed the first two).
1931. Onésimo Chagolla Vernal (Popular).
1932. Onésimo Chagolla Vernal (Popular).
1933. Javier Torres Leal (Popular).
1934. Tomás García Torres (Popular).

Agrarian Reform Period, 1934–40

1935. Onésimo Chagolla Vernal served in January. Agrarian dissension caused a military imposition of Captain Miguel S. Contreras, Major Antonio López Martínez, and Captain Antonio Yáñez Rosiles during the remainder of the year with the civilian secretary Isidoro García from Guanajuato filling some gaps.
1936. The imposed government continued through 1936 with Isidoro García, Captain Manuel Pérez Rubalcaba, and Juan Bautista Rodríguez (a native of Purépero, Michoacán).
1937. Juan Bautista Rodríguez continued the imposed government until he was assassinated in his office May 4, 1937. His successor was José Jesús Chagolla Mejía, the first president from the *barrio* El Calvario and representing the Sector Agrario.
1938. Florentino Gabriel Martínez (the first president from Santa Fe, and a representative of the Sector Agrario or Campesino).
1939. Florentino Gabriel Martínez (to September), and Leopoldo González Leal (a native of Tzintzimacato, Michoacán) to the end of the year (both Sector Campesino).
1940. Leopoldo González Leal (Campesino).

Current Period, 1941–

1941. Leopoldo González Leal (Campesino).
1942. Amador Peña Valdovinos (Campesino; from the Calvario district of Quiroga).
1943. Indalecio Chagolla Estrada (Campesino; from El Calvario).
1944. Heliodoro Anita Valdovinos (Campesino; from El Calvario).
1945. Heliodoro Anita Valdovinos (Campesino).
1946. José Encarnación Medina Fuentes (Sector Popular).
1947. Manuel Torres Serranía (PAN).

There will be noted some interesting changes in representation of family names through the years. Old families that lost out during the revolutionary years include Calderón, Domínguez, León, and Ponce. Families that became represented during the same years 1910–14 include Arias, Ayala, and Fuentes. Since 1937 the Calvario families such as Peña, Anita, and Valdovinos begin to appear. Families that have contributed five or more different men are the Chagolla, Torres, Valdés, Villanueva, Fuentes, Calderón, and Gutiérrez. The men who were president more than seven times were Trinidad Valdés, Isidro Calderón, and Francisco Torres Mendoza. The outstanding family, counting both the father and mother lines, easily is the Torres family. As is shown elsewhere, the Torres family has been the outstanding family in Quiroga at least since 1811.

THE SYNDIC

The *síndico* or syndic is the *regidor* who functions as the attorney general or business agent for the municipality. According to the law the syndic must have some knowledge of law, represent the *ayuntamiento* in legal matters, check contracts, and act as an agent for the State and Federal attorneys general. This position, which requires more education and practical experience than any other in the *ayuntamiento,* consistently has gone to a resident in the business district or "El centro" who was also a member of the Sector Popular. Recent syndics have been: 1946, Ubaldo Chávez;

1945, J. Encarnación Medina Fuentes; 1944, José Calderón Márquez; 1943, J. Encarnación Medina Fuentes; 1942, Leopoldo Estrada Torres and J. Encar. Medina Fuentes; 1941, Doroteo Barajas; and 1940, Fidel Cásarez F. and Ambrosio Herrera. Structures built by the municipality commonly carry the names of the municipal president and syndic who were in office at the time.

REPRESENTATIVES OF THE AYUNTAMIENTO

Since the *tenencias* are not within the area of our report, we will not discuss the *jefes de tenencia.* The *encargados del orden* in the six ranchos are appointed sporadically, and may remain in office for a number of years at a stretch. On occasion the *encargado del orden* will be the only person in a rancho who can read or write, although we encountered two who could not read. The duties of this office have been outlined previously. The chiefs of the four quarters or *jefes de cuartel* have very little real function, and apparently are no longer official. However, the possibly honorific title still obtains since we met two individuals who were referred to as being *jefe de cuartel.* The real work is carried out by the block chiefs or *jefes de manzana.* They serve as wardens, census takers, and messengers from the *ayuntamiento* to the families in their blocks. For example, when the primers for the recent literacy campaign were received in Quiroga, each chief saw to the distribution in his block.

EMPLOYEES OF THE AYUNTAMIENTO

The *regidores,* as such, serve without pay, but the president receives $3.00 (3 pesos) a day and the syndic gets $1.50 a day. The regular employees are: the secretary of the *ayuntamiento* who earns $4 a day; the treasurer of the municipality who averages about $5 a day; the scribe or secretary of the civil register, $3; the secretary of the local court or *juzgado menor,* $2.50; the chief of police or corporal of the guard (*cabo*), $2.50, and each of the four policemen or *gendarmes,* $2.25; the inspector of the slaughter house, $2; the *fontanero* or man in charge of the town water supply system, $1.50; the street cleaner (who is also municipal carter, and caretaker of the cemetery), $1.50; the town gardener, $1.75; and the custodian of the town clock, who receives $72 a year.

The secretary is appointed by and keeps his job at the pleasure of the *ayuntamiento.* Actually, the secretary and the treasurer carry out the major part of municipal business; and the secretary, by virtue of being "front" or contact man, and from being entrusted with the records, often occupies a position of influence and power. By law the secretary keeps the minutes of the *ayuntamiento,* makes out all necessary papers and carries on official correspondence, and is in immediate charge of the municipal archives. The man who was secretary while we were in Quiroga was the nearest equivalent of a professional politician and bureaucrat existing in that community. He had been on municipal, State, and Federal pay rolls most of the past 30 years, and had been secretary more times and longer than any other person. His last two periods as secretary were 1931 into 1935, and 1941 into 1946. Although he was helpful to us in many ways, nevertheless his procrastination and his faulty memory or poor filing system prevented us from obtaining all the information that should have been available in his office.

The most interesting records in the secretary's office are the minute books. None earlier than September 16, 1869, was located. Although *Libros de Actas del Ayuntamiento* should exist from the beginning of municipal government, either the earlier numbers were destroyed during some civil war or the French Intervention, or else the volumes prior to 1869 were among the "old documents" called in to Morelia in 1895. However, none were located in the State archives. The existing file of minute books is quite incomplete. The years covered are: 1869 to April 1880; March 1889 to August 1900; January 1929 to January 1935; and July 1940 to January 1944. Either the minutes for 1944 to 1946 were not kept, or they were not typed for public perusal. The secretary claimed that the revolutionary chief Inez Chávez García had burned many of the books in 1917, and that in 1927 a band of Cristeros led by Ladislao Molina of Pátzcuaro and Alfredo Elizondo of Tacámbaro burned other books and records. We still have to wonder what happened to the books for 1928, and 1935 to 1940. The latter books especially would have given much valuable information about the "imposition" period and the agrarian dissensions.

The other records in the secretary's office were: a register of correspondence for 1924 and 1925; books containing fines and punishments imposed by the municipal president 1886–94 and 1931–39; and books covering the initial inscription of owners

of livestock with their patented brands and other marks, and reinscriptions and renewals of brands, in general 1870 to date with some breaks.

MUNICIPAL FINANCES

The municipal treasurer is appointed by the *ayuntamiento*, and must post bond. His chief duties are to collect municipal imposts, maintain the treasury office and records, each December make an inventory of municipal property and other assets, make payments on authorization of the municipal president and the financial committee, and prepare a monthly statement with copies for the *ayuntamiento*, State congress, State department of the interior, and State auditor's office. Since March 16, 1941, Don Justo Campuzano Torres has been the municipal treasurer.

The municipal income is derived from the taxes, imposts, and other sources specified by State and Federal laws. The existing law is the *Ley de Hacienda para los Municipios del Estado*, published in Morelia, December 23, 1939. The law lists some 21 categories for sources of income, which are divided into five groups. These are carried on the books in Quiroga within 12 general branches or *ramos*. We will discuss the more important categories by number and name, and arranged in the order of the groups. The first eight items are referred to as normal taxes or *derechos*.

1. *Derechos de abasto.*—Butchers, owners, and/or handlers of cattle (all quadrupeds killed for food) must pay a tax upon the slaughter of the animal or animals in the *abasto* or municipal slaughterhouse. Quiroga has had three *abastos* or *rastros* during the past one hundred years. The slaughterhouse is always situated on the outskirts of town near a good supply of water. At present the "new slaughterhouse" is located at the exit from town on Calle Zaragoza. Either the treasurer or the *inspector del rastro* is present to check the title and brand of each animal before it is killed, and to see that the *derechos* (listed under Nos. 6 and 9) on brands and sales have been paid. All animals (oxen, swine, sheep, and goats) presumably must be slaughtered in the public *abasto*, but in actual practice there are very few sheep and goats killed, and this is normally done elsewhere. The treasurer must file the papers proving title to the animal or animals slaughtered. The inspector or *encargado de la matanza* must keep a book in which daily entries must be made of every animal killed: kind of animal, color of skin, original owner's brand, brands of later owners, special markings, origin (farm, rancho, etc.) of the animal, weight, taxes paid, names of the last buyer and seller, and the number on the record paper filed with the treasurer. The informer of clandestine slaughter receives 50 percent of the fine. Animals that die or that are killed away from the *abasto* must be taken there for sanitary inspection. The reason for so much attention to details in connection with the *derechos de abasto* becomes apparent when an inspection of the municipal accounts reveals that between one-fifth and one-third of the municipal income is derived from this tax. The actual tax is computed on the basis of 0.04 of a peso (i. e., 4 centavos) per kilogram of the weight of the dressed ox or pig plus the hide or skin, and 0.06 per kilogram on sheep and goats. Fresh, dried, and barbecued meats, upon which a tax has not previously been paid, must be taxed upon being brought from one *municipio* into another. In recent years 250 to 350 oxen and 350 to 450 hogs have been killed annually. Recent receipts have run (rounded to the nearest peso) monthly:

	1943	*1944*
January	$344	$244
February	243	205
March	221	233
April	193	243
May	190	197
June	143	184
July	177	206
August	223	169
September	253	202
October	301	193
November	251	182
December	237	275

2. *Derechos de mercados.*—These taxes are paid by those who occupy space within the public markets; by those who have space, stalls or booths in porches, halls, entrances, and other accessories of buildings; and by those who use the streets and public roads. Traveling merchants and those who use the streets pay $0.05 to $10 daily, according to the nature and cost of their goods. Merchants in *puestos* (literally "places") in and away from the *mercado* or plaza pay $0.05 to $0.30 per square meter daily. Semipermanent or movable stalls and booths (*expendios o puestos semifijos*) in or along side of public places and streets cost $0.05 to $0.75 daily. On feast or fair days (including all Sundays) rates may be increased 100 percent. These *derechos* are collected daily, and

printed receipts provided by the State accountant's office are issued. A monthly list of all persons paying *derechos de mercado* must be submitted to the accountant's office. Individuals whose stock of merchandise is worth less than 1 peso pay no taxes. While we were in Quiroga the merchants of cloth ("yard goods") and clothing who occupied public areas paid $0.50 to $1 per day, and the other merchants who occupied the same space every day paid $0.10 daily. Those who came only for the Sunday markets paid $0.05 to $0.10. Besides the sellers of cloth, the leading "semi-permanent" merchants with *puestos* and *expendios* were those who sold food, soft drinks, ice cream, and regional products such as pottery and woodwork. For the Sunday *mercados* or *días de plaza* white chalk was used to define the different *puestos*. Revenue from the *derechos de mercados* commonly ranks second only to the *abasto* taxes, and constitutes one-seventh to one-fifth of the total income. Recent monthly income (rounded to the nearest peso) has been:

	1943	*1944*
January	$137	$197
February	125	211
March	141	238
April	162	276
May	147	223
June	122	195
July	122	212
August	137	195
September	177	312
October	145	218
November	132	201
December	194	327

3. *Derechos de aguas.*—By law every owner of an urban house located on a street with water supply (available pipe or *tubería*), whose property is valued at 200 or more pesos (in *municipios* of the second category), must place water in the house. This applies also to all types of business where water is used; e. g., saloons, restaurants, etc. There are special rates for public baths, hotels, and other commercial and industrial enterprises, the rates for which are determined by a special committee composed of the municipal president and treasurer, the State tax collector in the municipality, and one ordinary citizen. Special contracts may be made with persons wishing to utilize municipal water for irrigation, but the scarcity of water has been so great for so many years that such use practically does not exist. During our first stay in Quiroga, in 1945, the municipality was raised from the lowest or third fiscal rank to the second; and this automatically raised the tax rate on water, burials, and some other items. Since we had been carrying out a detailed survey of the community, many of the citizens thought that we must be governmental assessors, and blamed us for the increase. The legal rates are (per faucet) $2 a month in properties valued at less than $500; $2.50 a month in properties valued at $500 to $2,000; $3 a month for properties valued at $2,000 to $5,000; and $4 a month for private houses valued at more than $5,000. Only the two lowest categories were present in Quiroga, together with a few commercial and industrial enterprises which paid between $5 and $10. The water tax is collected monthly in advance, and there is no reduction, rebate or cancellation of tax in case of scarcity or lack of water unless there has been complete lack of water for more than 30 consecutive days. The history and nature of the water supply is discussed elsewhere. The cost of installing water pipe to a private establishment is met by the owner, but thereafter the piping is the property of the municipality and must be kept in repair by the municipality. Federal, State, and municipal buildings pay no water-use tax. The general laws pertaining to the regulation and distribution of waters belonging to the municipality are still based on the law of May 21, 1906. Revenue from water usually occupies fourth place among the sources of municipal income. Recent monthly income has been (rounded to the nearest peso):

	1943	*1944*
January	$95	$105
February	93	107
March	93	107
April	91	107
May	91	107
June	92	111
July	92	109
August	90	109
September	90	109
October	90	109
November	90	109
December	94	113

4. *Derechos del registro civil.*—The law provides for an elaborate scale of fees for registry of births and performance of the civil marriage ceremony, according to whether performed in the home or in the office, and within office hours or at unusual hours, and according to the wealth of the family concerned. However, no charge is made for

registering births in the office within regular office hours; and, at least within recent years, all births have been so registered. Where the fee is variable, the law allows the scribe of the civil registry and the municipal treasurer to determine which quota is applicable. This has been done in Quiroga with reference to civil marriages. Apparently all civil marriages are performed in the office within regular hours. Within a municipality of the second class such marriage ceremonies cost the members of the richest families $20 to $25, while the families of intermediate economic position pay $10 to $15, and poor families pay $4. The marriage application costs $1. The recognizing or legitimizing of *"hijos naturales,"* the inscription of an adoption, certification of age, and comparable items carry a fee of $5. The inscription of a record of divorce costs from $10 for the poor to $50 for the rich. A search for some specific record, when the year is not known, costs $1 for each year examined, but the total cost is not to exceed a maximum of $5. The income from the civil register is minor, and does not equal the salary of the *encargado del registro civil.* There is no charge for the inscription of a death. However, there are attendant charges which are discussed under the next heading.

5. *Derechos de panteones.*—The cemetery belongs to the municipality. Ever since 1833 it has been illegal to bury in churches, and the construction of cemeteries apart from the grounds in front of and around the churches was required. However, Quiroga did not construct a cemetery until 1850, and rumor and tradition have it that persons were buried in and near the parish church occasionally even after that date. By law there are some four types of burial the fees for which vary with the capacity to pay. A burial, which will be undisturbed for 5 years, in the general burial area costs the three economic classes, respectively, $4, $10, and $20. All of the recent burials in Quiroga have been of this type. Burial, for 5 years, in an isolated or "distinguished" part of the cemetery costs $10 to $40. A perpetual sepulcher, in whatever location, costs $50 to $200, and the annual quota per body must be paid in addition. Annual renewals, after the first 5 years, cost 25 percent of the original charges. Burial in the "potter's field" or *fosa de cuarta clase* is free. Permission to remove a cadaver from the *municipio* of death to another costs $50 to $100. There are no charges for marriages or burials of State and municipal employees or pensionaries. The individuals in charge of the cemetery (the caretaker and scribe of the civil register) must keep a record of all burials with category and fee paid. The scribe of the civil register must make public monthly a list of all inscriptions of death and burial, marriage, birth, etc., and copies go to the municipal archives, the municipal treasurer, and the State auditor's office. While we were in Quiroga we did not see such lists.

6. *Derechos de registro y refrendos de patentes de fierros.*—Ever since 1870 the municipalities have been required to keep records concerning the number of livestock owned and the brands employed in the municipality. All large livestock or *ganado mayor* (oxen and equines) must be marked by a branding iron within the first 2 years after birth, or else upon acquisition of a nonbranded animal. Within 15 days after establishing a livestock business (commonly, five or more animals), the cattleman must select and present a unique brand before the municipal secretary. Then, in the book entitled "Matrícula de dueños de ganados," there must be registered the name and address of the owner, the location of his pastures, the kind and number of cattle, the date, a sketch of the brand, and a statement of the charges. This must be signed by the municipal president, secretary, and treasurer. No brand may be identical with or confusingly similar to another valid brand within the municipality. When a man ceases to own cattle, he must extinguish the brand by formal notification. The tax rate, upon registering a brand, is for 1 to 5 head of livestock, $3; for 6 to 10, $5; 11 to 20, $10; 21 to 40, $15; 41 to 60, $25; 61 to 100, $40; and on in this fashion, until a man with more than 1,000 head pays a tax of $500. Every year in the second half of December the municipal president must post a list of all persons with valid brands, and these men must revalidate (*refrendar*) their brands and number of cattle the ensuing January. Fees for this *refrendo de patente* are: for 1 to 5 head, $2; 6 to 20, $4; 21 to 50, $8; 51 to 100, $20; 101 to 150, $30; and on, until the man with more than 1,000 head pays $300. Practically no new brands have been matriculated in recent years, and apparently it has become the custom to make a flat charge of $5 no matter what the number of livestock owned. These *derechos*

commonly rank about sixth or seventh in income produced. Nearly all of it comes in during January.

7. *Derechos de licencias.*—These taxes cover licenses for commercial and industrial enterprises, other than new and worthy enterprises which are not taxed for the first several years. The chair-manufacturing business is new in Quiroga and consequently is not taxed. The law states that a license is required to open any sort of commercial establishment and any kind of diversion or public spectacle; to build, rebuild, or repair any urban structure; etc. Examples of rates are: saloons or *cantinas*, $50 to $300; mercantile and industrial businesses, $3 to $75 (with a 20-percent surcharge to be open outside of "normal" hours); for each billiard table, $1 to $5 and for each pool table, $0.50 to $3; gasoline pumps ("service stations"), $5 to $25; and traveling musicians, $2. Most taxes are $5 or $10. The specific quotas are assigned by the municipal president and treasurer. The foregoing taxes are paid annually.

8. *Derechos de certificados.*—This is a tax on certificates and certified copies. The basic tax is $2.50 for the first page and $1.50 for each page thereafter, with 50 percent additional for copies. Anything from the civil register costs the same as the above mentioned plus $1 a sheet for the specially stamped paper which is obtained from the State accountant's office. The treasurer must make a monthly report on the movement of the stamped paper. Matters pertinent to Indian and agrarian organizations are exempt from charges.

Three categories are listed as imposts or *impuestos*. These are:

9. *Impuesto sobre compra-venta de semovientes.* The term *semoviente* means "That which moves of itself," or livestock. Every animal sold must be accompanied by a title with the seal of the *ayuntamiento*. The municipal president must keep a book with the record of all these sales entered. The legal tax rate for the sale of each head of livestock is: *ganado vacunar* (oxen), *caballar* (horses) or *mular* (mules), $1; *ganado asnal* (asses), $0.75; *ganado porcino* (hogs), $0.60; and *ganado lanar* (sheep) and *caprino* (goats), $0.30. In case the animals belong to improved or pure breeds (*ganado de raza fina*) the rates are doubled. The income from this impost commonly rates fourth or fifth.

10. *Impuestos sobre diversiones públicas.*—These imposts are applied whenever there is an admission charge. The rates set by law have considerable amplitude, but the municipal president and treasurer are allowed to determine the specific rates. In general in Quiroga the charges are $3 to $4 for each show or performance. The local cinema has paid $3 weekly, although the law provides that the charge be 6 to 12 percent of the face value of the tickets sold. Other amusements that obtain in Quiroga from time to time are dances (not including private and free public dances), traveling circuses and carnivals, theatricals, puppet shows, and roulette wheels—for which there are daily or performance charges. Whenever admission is charged, money may not be received at the door; tickets, stamped with the seal of the municipal treasury, must be purchased previous to entrance, and an inspector is present to see that the tickets are presented and torn. Among other amusements where the tax is a percentage of the value of the tickets are boxing matches, bull fights, and *jaripeos* (a rural combination of a *rodeo* and usually bloodless bull fighting), and various ball games, such as soccer and basketball. Theoretically a percentage of the bets won is collected at horse races and cock fights. In licensed poolrooms and saloons there is a monthly tax collected on each pool and billiard table, and on each domino owned by the house. Electrically operated musical machines (juke boxes) pay $10 to $60 monthly.

11. *Impuestos sobre instrumentos motariales.*—Any type of written material (*escritura*) that is authorized by a notary or tax collector carries an impost of $2 if the values involved do not exceed $10,000, and $0.50 for each additional $1,000. If the notarized paper is of a private nature or does not involve a statement of value, the charge is $1 a page. The notarized papers in Quiroga average an impost of $2.

The 11 headings given above and the following 1 constitute the 12 branches into which municipal accounting normally is divided. Nine of the above-listed taxes (all but *mercados* and *panteones*) have a 10 percent additional surcharge which goes to the State for the public roads fund. There is also another surcharge of 5 percent, which is a contribution to the Federal Government, applied on the nine items mentioned previously and also on municipal fines or *multas*.

12. *Productos de ventas y rentas de bienes inmuebles del municipio.*—This category includes the income derived from the sale (with permission of the State congress) or rent of municipal buildings and lands. There was no such income during the period 1943–45. Although not strictly covered by the title of the category, the law on the subject also covers the money derived from the sale of confiscated firearms and other weapons, lost-and-found items, abandoned and strayed animals, etc.

Minor headings, which represent specialized income from a number of the categories given above are: *Rezagos* (unpaid remainders or overdue taxes), *recargos* (surcharges for those who do not pay on time), and *multas* or fines which are applied for a considerable list of private and public offences against the municipal *Ley de Hacienda*. Also in this group of *aprovechamientos* are gifts, indemnities for destroying public property, income from the sale of ownerless lands, and income from the sale of ownerless animals (*bienes mostrencos*). The municipal president must send a list of all impounded lost or strayed animals to all of the bordering municipalities. Then, after a wait of several weeks, the animals must be appraised, a list must be published, and finally the animals are auctioned off. One can always find a number of such lists, from the local and neighboring municipalities, posted in the municipal palace. Actually, there is very little income in Quiroga from any of the items mentioned in this paragraph excepting fines.

Very important sources of income, listed under *Participaciones*, are the Federal and State subventions and sums remitted from certain taxes collected within the municipality. A varying and small amount is remitted from Federal taxes on sales places of alcohols (*expendios de alcóholes*), mining properties, lumbering and other *explotación forestal*, generation and consumption of electrical power, gasoline sales, etc. In Quiroga this Federal remittance is chiefly on forest products. The bulk of the *participación* is provided by the return of 60 percent of what the State has collected within the municipality through its general impost on commerce and industry. This impost is collected by the local State tax office, and the 60 percent is turned over to the municipal treasurer on the fifteenth and last day of each month. When income from this source is not sufficient to round out the municipal budget the State congress may make an additional grant. *Participaciones* commonly rank third among municipal sources of income.

The total municipal income recently (1945 and 1946) has amounted to about $15,000 annually. Approved annual budgets usually are less than the actual receipts and expenditures. Total receipts for the years 1941 to 1944 are shown in table 22. The figures shown in table 22 do not include the 10 percent State and 5 percent Federal surcharges. An interesting basis for comparison with other municipalities in Michoacán is provided by a circular issued May 26, 1945, by the State general accountant's office. This circular gives the 1944 income of all municipalities broken down by categories. Incidentally, the 1945 circular credits Quiroga with $2.40 more in *mercados* and $5 more in *panteones* than indicated in the local Quiroga records. Also, nothing is listed for Miscellaneous, but *instrumentos notariales* are credited with an additional $115. Although the Federal 5 percent surcharge is not included, Quiroga is credited with the State 10 percent surcharge amounting to $834.12, for a total of $14,511.22 income in 1944. We have selected for comparison, out of the 102 municipalities in Michoacán, the largest and smallest in population (as of the 1940 census), all of the neighboring *municipios*, and several others of interest in the region (table 23).

Comments on table 23: Quiroga is almost the median municipality in population (1940). Of the 17 other categories, Quiroga is in better position than her population rank in 10: Aguas, 11; mercados, 24; abasto, 31; diversiones, 37; certificados, 40; panteones, 41; State 10 percent, 44; total income, 45; notarized paper, 45; and State participation, 48. While we were in Quiroga we did not take sufficiently detailed notes. The "?" indicates a position not determined by us, within the following limits: *abasto*, 52 to 90; *mercados*, 54 to 74; *aguas* not in the top 12 of 38 municipalities that have water changes or else without a water charge ("*" means definitely no water charges in 1944); *registro civil*, 66 to 84; *panteones*, 21 to 102 or no charges; *fierros*, 66 to 83; *licencias* 21 to 94; *certificados*, 10 to 94; *semovientes*, 67 to 100; *diversiones*, 40 to 82; *instrumentos notariales*, 49 to 58: *multas*, 18 to 89; miscellaneous, 20 to 102; State, 10 percent, 52 to 87; Federal

TABLE 22.—*Total municipal income 1941–44 in Quiroga*

Tax category	1941	1942	1943	1944
1. Derechos de abasto	$3,353.45	$3,914.00	$2,775.24	$2,533.34
2. Derechos de mercados	1,729.00	1,700.30	1,740.70	2,803.60
3. Derechos de aguas	955.50	1,033.50	1,099.50	1,296.50
4. Derechos del registro civil	308.00	205.00	304.00	387.00
5. Derechos de panteones	181.00	139.00	175.00	233.00
6. Derechos de . . . fierros	459.00	499.05	494.00	1,045.00
7. Derechos de licencias	212.77	269.50	274.00	490.15
8. Derechos de certificados	126.00	139.00	358.50	358.85
9. Impuesto . . . semovientes	744.00	878.75	887.75	1,776.00
10. Impuestos . . . diversiones	73.25	97.50	450.00	465.50
11. Impuestos . . . instrumentos notariales				97.00
12. Productos . . . del municipio	135.90	44.50		
Miscellaneous	51.00	42.00	116.00	115.00
Multas	495.25	357.80	687.60	95.10
Participaciones 60 percent	1,586.96	1,951.50	1,637.71	1,878.16
Participaciones forestal			400.06	95.50
Total	10,451.08	11,271.40	11,400.06	13,669.70

TABLE 23.—*Comparison of various municipios* [1]

Category	Morelia	Pátzcuaro	Cuitzeo	Zacapu	Escalante	Coeneo	Acuitzeo	Huaniqueo	QUIROGA	Nahuatzen	Chucándiro	Tzintzuntzan	Erongaricuaro	Cherán	Coahuayana
1940 population	1	8	17	18	23	24	36	49	51	56	69	84	88	97	102
Total income	1	5	58	19	27	55	29	73	45	92	71	102	84	96	99
Abasto	1	8	42	14	24	63	23	(?)	31	(?)	(?)	102	89	86	98
Mercados	1	17	(?)	10	49	(?)	51	85	24	93	50	81	(?)	84	---
Aguas	(*)	(*)	(?)	7	(?)	(?)	(*)	(?)	11	(?)	(?)	(?)	(*)	(*)	(?)
Registro civil	1	7	44	19	43	47	15	60	64	(?)	63	94	90	85	101
Panteones	1	5	17	(?)	(?)	(?)	(?)	(?)	41	(?)	(?)	(?)	(?)	(?)	(?)
Fierros	1	32	(?)	40	13	8	42	17	63	(?)	31	84	64	92	(?)
Licencias	1	4	(?)	(?)	(?)	(?)	(?)	(?)	60	(?)	(?)	98	(?)	(?)	(?)
Certificados	1	7	(?)	(?)	(?)	(?)	(?)	(?)	40	(?)	(?)	95	(?)	(?)	96
Semovientes	2	17	(?)	43	35	47	16	50	66	54	53	102	(?)	(?)	(?)
Diversiones	1	5	(?)	9	21	36	(?)	(?)	37	(?)	(?)	---	(?)	(?)	(?)
Instrumentos notariales	1	6	33	11	69	29	27	(?)	45	83	71	59	66	48	102
Multas	11	7	(?)	(?)	(?)	(?)	(?)	(?)	90	(?)	(?)	100	(?)	99	(?)
Miscellaneous	1	5	(?)	19	(?)	(?)	(?)	(?)	---	---	(?)	---	(?)	(?)	---
State 10 percent	1	5	(?)	13	30	43	28	(?)	44	(?)	(?)	102	94	96	98
State participaciones	1	5	37	11	23	35	32	80	48	84	83	97	62	99	102
Federal participaciones	11	23	(?)	(?)	10	---	22	---	62	---	---	---	(?)	(?)	(?)

[1] The figures represent rank (out of 102) for the various subjects and headings listed.

participación, 34 to 59. The leaders (--) indicate no income from *mercados*, *diversiones*, miscellaneous, and Federal participation. The mean income per capita in the Municipio de Quiroga is $1.67, as compared with $6.09 in Morelia and $0.47 in Tzintzuntzan.

We were unable to obtain a complete and coherent picture of the municipal expenditures. Regularly approved salaries totaled $1,115.64 a month in 1945. This would amount to $13,387.68 a year. The 1945 monthly expenditures for salaries and wages can be compared with the 1870 annual expenditure of $636, and $714 for the year 1880. Other expenses (*gastos*) are said to be around $4,000 a year. However, the combined expenses and salaries for 1944 amounted only to $12,380.25. Probably salaries and wages do not run at the maximum allowable during many months of the year. Some of the more important items under *gastos* are: $1,000 or more for public works (roads, bridges, water supply, etc.); $720 for town lighting; $460 for "extraordinary" and social expenses; $270 for feeding the municipal mule (used by the municipal street cleaner and carter); $190 for office supplies; $150 for installation of the new *ayuntamiento;* $100 for patriotic festivals; $50 to feed prisoners; and $30 for election expenses. The enumerated items amount to about $3,000, unless public works run higher than $1,000. Total expenditures for salaries and expenses may run between $900 and $1,250 a month. This can be compared with monthly figures of about $136 in 1872, $153 in 1874, $177 in 1875 (after Tzintzuntzan had been incorporated), and $241 in 1880. Other comparative figures include: income of $1,526.62 and expenditures of $1,840.74 in 1868–69; income of $3,501.27 and outgo of $3,235.57 in 1885–86 (in this fiscal year Quiroga ranked 15th out of 75 municipalities in income); and budgets of $5,076 in 1891–92, $6,665.25 in 1895–96, $10,560 in 1943, and $10,900 in 1944. Considering the change in the purchasing power of the peso since the 1880's (it now takes $5 to $15, or an average of $9 to purchase what $1 would buy of such commodities as corn, wheat, and beans in the 1880's), municipal government is cheaper now than it was some 50 to 70 years ago, both absolutely and per capita.

MUNICIPAL COMMISSIONS

For at least the past 80 years, commissions or committees have existed to supervise and advise on the principal branches of municipal business and government. The membership varies from one entirely composed of members of the *ayuntamiento* to one entirely non-*munícipes*. At present there are 10 commissions, commonly composed of a president and 3 other members or *vocales*. The business of the various commissions is a good index to the matters that most concern the active citizens of Quiroga. Some commissions of the past have ceased to exist because of changed conditions; e. g., commissions on pawnshops, lodgings (important when Quiroga was a great center for *arrieros* and animal convoys), jails, and weights and measures (very important before the metric system became mandatory and common). Under varying names all but one of the present commis-

sions (*Caza y Pesca* or Game and Fish) have been in existence for 50 or more years. The list consists of *Hacienda* (Finance), *Alumbrado y Ornato* (Lighting and Decorations), *Educación, Carreteras y Caminos* (Highways and Roads), *Caza y Pesca, Abasto y Mercados* (Slaughterhouse and Markets), *Aguas* (Water supply), *Espectáculos Públicos* (Public Entertainment), *Salubridad* (Health or Sanitation), and *Bosques y Arboledas* (Woods and Plantations). As of April 24, 1945, a *Junta de Mejoras Materiales* (Board of Public Works) was organized which has replaced the former *Comisión de Obras Publicas*. The junta has taken over all business formerly associated with *Aguas* and most of that of *Alumbrado y Ornato*, but it is especially concerned with the deficient water supply. The composition of the junta in 1945 and 1946 was: Dr. Arturo H. Rascón (president), José Medina Gaona (secretary), Rafael Villicaña (treasurer), and Ramón Fuentes Medina, Antonio Castellanos (the local collector of State taxes), and the incumbent syndic. The treasurer of the junta now collects the water-use tax, formerly collected by the municipal treasurer. The municipality itself supplies all of the public services and utilities excepting education and health (which are Federal) and electricity (which is purchased) although there is Federal and State aid for such items as roads.

MUNICIPAL JUSTICE

The lowest order or unit of justice in the State of Michoacán is the *alcalde* or judge in the *tenencias* and the two *jueces menores* (formerly *alcaldes* and *jueces de paz*) in the municipal capital. Formerly the *alcaldes* or *jueces menores* were locally elected by direct popular vote and were members of the *ayuntamiento*, but they have ceased to be a part of the *ayuntamiento* and they are no longer elected. Some time in January the new *ayuntamiento* submits a slate of four names to the State supreme court. Normally the court will approve the slate, and will designate two as proprietary judges and the other two as substitutes. The two judges alternate monthly in serving in the local court or *juzgado menor*. Usually the same judges will be reappointed for a second year. In 1943 and 1944 the proprietary judges were Efrén Chagolla Campuzano and Tomás García Torres, although the substitutes, Gilberto Romero and José Rivera, handled the court in 1944. The judges in 1945 and 1946 were José Calderón and Indalecio Chagolla. The office of the local court is on the upper floor of the municipal building. The records and the paper work there are taken care of by the *secretario del juzgado* whose salary is paid by the *ayuntamiento*. The judicial archives in Quiroga consist of: Copies of the *Ley Orgánica de Tribunales*, the *Constitución Política del Estado de Michoacán de Ocampo*, penal and civil codes, scattered laws and edicts of the State congress (including some for 1826–29), and scattered numbers of the Periódico Official de Michoacán. Also there are papers pertaining to criminal cases dating back to 1764, intestate judgments for 1880, and registers and correspondence concerning civil and criminal cases, prisoners, sentences, inventories, etc., for scattered years. Unfortunately, we did not have the time to study the records or determine the frequency of different types of crimes. Apparently most of the cases are civil, or involve offences against the public order such as committing a nuisance, disorderliness, rape, theft and robbery, attacks resulting in wounds, homicide, and abductions. Cases may be tried in this court which do not result in fines of more than $300 or jail sentences of more than 6 months. Cases may be appealed to the court of first instance in Morelia (to which judicial district Quiroga belongs), but apparently many cases are carried to the *juzgado de primera instancia* in Pátzcuaro. Pertinent documents or *comprobantes* in civil cases pertaining to real estate are filed with the local office of State tax collection.

STATE GOVERNMENT

The State government (governor or congress) may and often does intervene in the municipal affairs, especially with respect to the election of *ayuntamientos*. The records indicate that in addition to the *ayuntamientos* of 1935–37, there were other impositions as in 1930, 1889–90, 1875, 1870, etc. We have already outlined the financial relations between the municipality and the State government. The ultimate court of legal appeal is the State supreme court in Morelia. There is direct public election of State congressmen every 3 years and of the State governor every 6 years. Michoacán is divided into 11 State electoral districts, presumably one for about every 100,000 people. At the moment, and for a number of

years, Quiroga has been in the second electoral district of which Pátzcuaro is the center or most important community. Usually the State congressman or *diputado* from the second district is a native of Pátzcuaro. Very often he will suggest to the *ayuntamiento* and political leaders of Quiroga whom he would like to have elected president or syndic of the *ayuntamiento*, or someone whom he would like appointed secretary of the *ayuntamiento* or president of the electoral council. The legislature of Michoacán is unicameral, and consequently there are no senators. The elections for *diputado* and governor are carried out locally much as are the municipal elections, excepting that the election day is on the first Sunday in June, and the State congress constitutes the final electoral court to judge the validity of the elections.

There are only two regular State offices in Quiroga, that of the State telephone network (housed in the municipal palace and attended by the scribe of the civil register) and the State tax office or *Receptoría de Rentas*. Since the State owns no building in Quiroga, the tax office moves around with the tax collector and usually is a front room in a rented house. Since the State taxes collected by this office are chiefly on real estate the details of the office's work are given with the discussion of land ownership.

FEDERAL GOVERNMENT

The Federal Government is directly represented in Quiroga only by the personnel of the post office and by the Federal stamp agent. The local post office is a full *Administración de Correos* (to which is attached the *sub-administración* in Tzintzuntzan). It is housed in a rented office a few yards from the Municipal Building. The personnel consists of the postmaster or *administrador de correos*, one or two assistants, and a *cartero* or mailman. The postmaster for the past several years has been our good friend Don José Medina Gaona. The most widely applied Federal tax is the stamp tax which is in the form of stamps that must be attached to a great variety of legal, commercial, and industrial papers such as invoices, receipts, each page of account books and ledgers, etc. The local representative or *agente del timbre* maintains the municipal agency or *agencia del timbre* (which depends from the regional office in Pátzcuaro) in his home, which also contains a store, and which is located on the Calle Nacional nearly opposite the post office. Although Manuel Robles Fuentes is the appointed agent, Francisco Fuentes and Francisco Fuentes Rojas have performed the duty for many years. Probably we should include the two Federal primary schools and their personnel. Since the revolution all the public schools in Quiroga have been maintained by Federal funds. There is a Federal coeducational primary school in a rented building on the Calzada Ramón Corona half a block from the principal plaza, and there is a Federal rural primary school in the former chapel of San Miguel in the Calvario *barrio* near the northern outskirts of town. This latter school is primarily for the children of the *Comunidad Indígena* and of the *ejidatarios*. The personnel consists of 10 teachers. These Federal primary schools are administered from the Federal educational office for the State of Michoacán in Morelia.

Naturally, there are dozens of other ways in which the Federal government, its laws and its organizations, affect the municipality of Quiroga. According to the constitution and definitive decrees, the wealth of the subsoil, Lake Pátzcuaro and its affluent streams, and other natural resources, belong to the Federal government. Since most of the municipality of Quiroga which borders Lake Pátzcuaro falls within the lands of the three western dependent pueblos, there are no navigation lights or other Federal installations on the lands of Quiroga proper. Formerly Quiroga owned a boat landing to which periodic visits were made by lake steamers and other vessels, but this has been abandoned so completely that it is now impossible to even locate the former site of the *muelle*. The forests and their products are subject to Federal control and tax, but this is handled by remote control out of Morelia and Pátzcuaro. There are no mines of minerals which would come under Federal control. The Federal *Secretaría de Comunicaciones y Obras Públicas* controls not only the post office and the navigation of the lake, but it has contributed much to the development of the main oiled road which passes through Quiroga from Mexico City and Morelia to Guadalajara, and also the oiled road which branches south at Quiroga to Pátzcuaro and southward. Federal, State, and municipal funds have been involved in the development of the Quiroga road network. However, there is no

formal State or Federal road office in Quiroga, although occasionally a sectional road boss and a small group of construction or repair workers will live in Quiroga and maintain some machinery there. Federal highway motor patrolmen commonly ride through Quiroga at least once a day, but there is no local office. Such Federal bureaus as those of Potable Waters, Irrigation, Electricity, and Game and Fish have operated in Quiroga from time to time, but only the *Comisión Federal de Electricidad* has left much mark—in the shape of the power line which brings electricity to Quiroga from a plant near Tacámbaro. The Quiroga *ejido* is an important manifestation of the Federal government, but all the members and administrators are local. The agrarian set-up is considered under Land Ownership and Agriculture. Quiroga is located within the 21st military zone with headquarters in Morelia, but it has been many years since there was a Federal garrison or military detachment in Quiroga.

SUMMARY

The municipality of Quiroga constitutes the basic government of our area, and it is responsible only to the State government. In such items as taxation and elections Quiroga is in the Pátzcuaro district, but in justice and in practically all other State and Federal regional groupings Quiroga is dependent upon offices in Morelia. The comparative nearness of Morelia (27 miles) which is not only the State capital but also the largest city in the State, has tended to offset the proximity of Pátzcuaro (15 miles) and its ancient prerogatives. This has been accentuated by the fact that good road communication existed between Quiroga and Morelia earlier than between Quiroga and Pátzcuaro. The median position of Quiroga among the municipalities of Michoacán in point of population would indicate that the functioning of government that we have outlined for Quiroga should be somewhat typical of municipalities in this part of Mexico.

ECONOMY

The basic economy of Quiroga and its ranchos is agriculture, and this has been the case since prehistoric times. In second place come the handicrafts, especially the making of various wooden goods, such as decorated bowls and chairs. The remainder of the economic picture is filled out by services such as those rendered by merchants, butchers, cobblers, carpenters, masons, barbers, et al. Throughout the colonial period there is mention only of cultivating crops, raising livestock, and making various objects of wood. In Martínez de Lejarza's (1824) description of Michoacán in 1822 the economy of Cocupao is given as the raising of maize and wheat, and the making of *bateas* and decorated chests. During the nineteenth century the manners of making a living began to diversify because of acculturation (the shift from an Indian to a mestizo manner of living), increase in population and wealth, and an important transportation business (chiefly pack trains and traveling merchants). Although woodworking declined, more valuable products came from the rum distilleries and flour mills that were established during the second half of the nineteenth century. The pack trains were nearly put out of business by the railroads that penetrated the region 1883–1914, and the Madero Revolution and succeeding disturbances caused a decline in all forms of economy during the period 1910–30. The surfacing of the through highway, and its spur to Pátzcuaro and Tacámbaro, has revived the importance of Quiroga as a transportation center, and the entire economic picture has improved—from woodwork for tourists to agricultural products.

AGRICULTURE

Agriculture in the Quiroga area comprises the cultivating of plants, the raising of animals, and the gathering of forest products. The latter group has been included because the bulk of the forest products (firewood, charcoal, wood for *bateas*, wild fruits, thatching and packing materials, etc.) are gathered and elaborated by the farmers and their families—especially in the off-seasons when they are not busy with planting, cultivating, or harvesting the regular crops. The plants utilized and cultivated fall into four groups: fruits and vegetables which are raised on the *solares*, fruits and vegetables which are raised away from the house plots but within the precincts of town, field crops, and wild plants of the woods and forests. The animal economy comprises animals kept in and near the house (tamed

animals and pets, poultry, and swine), animals grazed in large numbers (cattle or oxen, sheep, and goats), and work animals (equines and work oxen). Since there is no fishing, little hunting, no mining, and only a little quarrying of stone and digging of earths, the agricultural pursuits account for the utilization of practically all of the area outside of the settlements. As mentioned previously, about 1,100 hectares are cultivated and 2,756 hectares comprise the pastures and woodlands.

The number of individuals who are directly connected with agriculture in Quiroga and its ranchos is somewhat difficult to figure. Of the 291 persons who own the 475 parcels of rural property in the area (not counting the *ejidatarios*), not more than 170 are resident farmers and the remainder are absentee landlords or are local merchants and businessmen who only visit their holdings periodically. The number of actual farmers, i. e., those who do farm labor (owners, members of the family, share croppers, hired laborers), varies greatly from season to season and from one year to another. Consequently, census figures give only an approximation of the facts. The situation is further confused by the following factors. The terminology is quite uncertain. There is no doubt about a farm owner when he states that he is an *agricultor propietario*, but many owners are content to classify themselves as *agricultor* which means merely farmer or agriculturist. Most of the share croppers or *medieros* also call themselves *agricultores*, as do some of the landless day laborers. Sometimes the term *campesino* (countryman or rustic) is used as a synonym for *agricultor*, but commonly *campesino* is used for a landless rural laborer, a *mediero*, or an *ejidatario*. In Quiroga at least half of the *ejidatarios* (collective farmers on the *ejido*) term themselves simply *batellero* (one who cuts down trees and works out the crude wooden bowls known as *bateas*) since this was their main occupation before receiving the *ejidal* grant, and it is still the chief means for supplementing the inadequate income derived from the *ejidal* farms. In spite of some confusion, we can take for granted that practically all *agricultores*, *campesinos*, and *ejidatarios* are primarily farmers. A quite variable group comprises the minor males of a farming family who may be known as farm laborers (*jornalero del campo*), *campesino* or *agricultor*, or merely as *agricultor-ayuda familia* (farmer family aide). In some families boys as young as 7 years are included in the category of family helper, although commonly the ages involved are from 12 to 18. Unfortunately, neither in the census of 1940 nor in our census of 1945 were the returns in this category either consistent or comparable. Finally, there is the large group of day laborers known by such terms as *jornaleros* (day laborers), *peones* (literally a footman or infantry soldier, now applied to manual laborers and any unskilled laborers), *trabajadores* (workers), *labradores* (laborers), *braceros* (manual laborers), etc. This large group of unskilled manual laborers provides a labor pool whence come workers on the highway, in the chair factories and flour mill, on the farms, etc. During the busy farming seasons (plowing, planting, cultivating, and harvesting) the majority of these *jornaleros* become *jornaleros del campo*. Although the majority of the laborers who work on the farms some part of the year term themselves *jornaleros del campo*, many of them will give their current occupation at the moment of the census and may show up as carpenters (rough carpenters in the chair factories), water-carriers (*aguadores*), gatherers of firewood (*leñadores*), makers of adobes (*adoberos*), road workers (*peones de camino* or *carretera*), and general assistants around various town enterprises (*mozos*). In view of this situation, undoubtedly the number of *jornaleros del campo* given in table 24 should be increased considerably. However, the stated number of farm laborers may come close to the equivalent number of full-time workers. The farm picture is still incomplete, however, since the women, girls, and young boys often participate in various aspects of the farm labors such as planting maize, beans, and pumpkins, placing fertilizer in the hills of corn and beans, harvesting beans, gleaning, herding livestock, caring for the poultry and swine, etc. Also, when the women are not actively engaged in farm pursuits they often are decorating the *bateas* (in the case of the women of El Calvario), making *pulque* or preparing the roasted *maguey*, preparing and carrying meals to their menfolk in the fields, gathering wild *tejocote*, *capulín*, and cactus fruits, etc., as well as looking after their regular household chores. Actually the entire population of the ranchos and of the farming families in Quiroga above the ages of 7 or 8 should be included in the agricultural population of the area. Table 24 gives some

figures on agricultural population in the Quiroga area (Villa de Quiroga and its ranchos) in 1940 and in 1945.

TABLE 24.—*General and agricultural population in Quiroga*

Population	1940	1945
General:		
Total population	3,899	4,159
Total males	1,948	1,996
Adult males	851	982
Total number of families	871	931
Total number of households	735	797
Agricultural:		
Agricultores propietarios	139	170
Agricultores-ayuda familia	125	130
Ejidatarios	31	68
Agricultores, campesinos	181	112
Jornaleros del campo	185	122
Total	661	602

The decrease registered between 1940 and 1945 in the last two categories represents primarily the shift of laborers into the building trades and chair manufacturing, and the absence of some as *braceros* in the United States. The increase in number of landowners is fictitious, since the 1940 census grossly understated the number which we increased after consulting the tax rolls. The increase in number of *ejidatarios* is due principally to the fact that we listed all official members of the *ejido*, including those who gave *batellero* as their occupation.

HISTORY OF CROP FARMING

The principal source of agricultural income is from the farming of field crops. This was not the case with the pre-Conquest Tarascans who had no draft or pack animals, used the digging stick and hoe instead of a plow, and lacked a number of the important field crops which were introduced by the Spaniards. We know from archeologic evidence and the reports of the sixteenth century that the Tarascans planted small fields near their houses and cultivated these fields with such attention to each individual plant that it was more horticulture than agriculture or field farming. They had neither the plants nor the equipment for large fields and broadcast sowing. It is probable that at present Old World plants (of all types) occupy a greater acreage and yield a more valuable production than do the native plants. The principal native plants were as follows (the last italicized name within parentheses is Tarascan):

Maize (*maiz, tsiri*), *Zea mays* L., which was the chief source of starch (in tortillas, tamales, parched corn, *atoles, pinoles*, hominy, etc.) and for sirup and drink (juice from the cane was boiled down to a sirup and also was fermented, and the grain was made into a beer). The Relación de Michoacán also mentions that the Tarascans irrigated some of their cornfields, and had three kinds of corn—colored (probably yellow and red), spotted (*pintado*), and white.

Amaranth (*bledo, quelite, alegría, huautli, parí*), *Amaranthus paniculatus* L. var. *leucocarpus* Saff., which was an important breadstuff second only to maize, and probably was used locally before the introduction or cultivation of maize.

Goosefoot (*bledo, quelite, xacua*), *Chenopodium* spp. Several of the chenopods were collected wild to be used as pot herbs (greens and for flavoring) and probably some of the *bledos de muchas maneras* were cultivated to a slight extent.

Kidney bean (*frijol, thatsini*), *Phaseolus vulgaris* L. Red and black beans were raised in abundance and were used in a variety of ways including in tamales.

Pumpkin (*calabaza, melón, puruan*), *Cucurbita pepo* L. The Spaniards immediately after the Conquest used *calabaza* and *melón* as synonyms for the pumpkin, although some of the more precise restricted *melón* to edible pumpkins and used *calabaza* for inedible pumpkins and the calabash gourd (*Lagenaria*). Phraseology was so loose that we cannot be certain as to what cucurbits in addition to the *Cucurbita pepo* were present. Probably the calabash gourd and also the musky pumpkin *Cucurbita moschata* Duch. and the fig-leaved pumpkin or *chilacayote* (*Cucurbita ficifolia* Bouché) were cultivated by the prehistoric Tarascans.

Chile pepper (*chile, axi, cauás*), *Capsicum frutescens* L. The Spaniards at first used the West Indian term *axí* rather than the Nahuatl *chilli*. The Tarascans had green, red, and yellow chiles which were used as sauces and as filler for tamales.

Agave (*maguey, amole, acamba*), *Agave* spp. The century plant or agave was cultivated in a number of species, and was utilized for sirup, wine, food, fiber, etc.

Tobacco (*tabaco, picietl, andumucua*). Several species of *Nicotiana* were cultivated (*N. tabacum* L., *N. mexicana* Schlecht., *N. rustica* L.) and were used for smoking, chewing, drinking, incense, and medicine under such names as *andumucua, shasharacua, sinchacua*, and *itzutacua*. Michoacán probably has more prehistoric pipes than any other state in Mexico. The last three Tarascan names actually refer to the implements used.

Tomato (*jitomate, xucupara*). We cannot be certain how the writer of the Relación de Michoacán was using the Mexicano word *tomate*. Literally *tomatl* refers to the fruit of a large number of solanums of the genera *Solanum, Saracha, Lycopersicum, Nicandra*, and *Physalis*, and *tomate* is most commonly used in the unmodified form for the husk-tomato of the genus *Physalis*.

Cotton (*algodón, xurata*), *Gossypium* spp. Although cotton was woven in the Pátzcuaro Basin, the evidence indicates that it was brought up from the *tierra caliente* to the south.

In addition to the above plants (all of which were mentioned as cultivated, in the Relación de Michoacán), there were undoubtedly a number of other cultivated plants of lesser importance. From the Gilberti dictionary of 1559 and other records of the first years of Spanish occupation we know that there were cultivated in Michoacán such plants as: Chayote (*apupu* or *apupio*), *Sechium edule* Swartz; several species of cacti; custard apple (*chirimoya, ate*) *Annona cherimola* Mill.; white *zapote* (*zapote blanco, uriata*), *Casimiroa edulis* Llave and Lex.; avocado (*aguacate, cupanda*), *Persea gratissima* Gaertn. or *Persea americana* Mill.; Mexican wild cherry, (*capulín, xengua*), *Prunus capuli* Cav. The botanical evidence would add such plants as the many-flowering bean (*Phaseolus multiflorus* Willd.), several *frijolillo* beans (*Canavalia* spp.), jícama (*Pachyrhizus angulatus* Rich.), chia (*Salvia chia* Fernald), guava (*Psidium guajava* L.), Mexican hawthorn (*Crataegus mexicana* Moc. et Sessé), etc.

Within a few years after the Conquest the Spaniards introduced a great many Old World plants, according to the evidence of the various censuses, *relaciones geográficas*, and the reports of Hernández and Ponce—which cover the period 1529 to 1586. Some of the introductions were made by the conquerors and *encomenderos* (especially of the more valuable crop plants such as wheat, barley, horsebeans, and sugarcane), but the majority were made by the friars and regular clergy (especially of fruit trees, vegetables, flavoring herbs, and ornamentals). Definitely by 1586, and in most cases much earlier, the following Old World plants were being cultivated in northern Michoacán: Onions, leek, garlic, water cress and garden cress, asparagus, artichoke, lettuce, endive, cabbages, mustard, radish, turnip, purslane, parsley, carrot, beet, eggplant, cucumber, sorrel, horsebean, chickpea, lentil, common peas, wheat, barley, flax, hemp, anise, cumin, licorice, sweet marjoram, pennyroyal, peppermint, coriander, apple, apricot, banana, cherry, citron, date, fig, grape, lemon, lime, mulberry, nectarine, olive, orange, peach, pear, plum, pomegranate, quince, sugarcane, walnut. The most important cultivated plants in the Pátzcuaro Basin during the sixteenth century (judging only from frequency of mention) were: Maize, wheat, and barley among the cereals; beans, pumpkins, and chile peppers among the vegetables; and quinces, peaches, apples, figs, and *magueyes* among the fruits. Among other plants mentioned specifically for the Tzintzuntzan-Cocupao-Santa Fe area were olives, walnuts, citrus fruits, mulberries, cactuses, lentils, flax, hemp, and licorice. It is noteworthy that rye, oats, millets and sorghums were not mentioned, since these cereals have never been of importance in northern Michoacán, and are practically lacking today in the Pátzcuaro Basin. Potatoes (known in the wild state) probably were not introduced from South America until the end of the sixteenth century, and are still relatively unimportant. During the sixteenth and seventeenth centuries a number of other plants were introduced from South America, among which were several that reached the Pátzcuaro Basin: *Oca del Perú*, also known as *papa de castilla* and *papa colorada* (*Oxalis tuberosa* Molina); the true squash or *calabaza de Castilla* (*Cucurbita maxima* Duch.); and a number of ornamentals. Although there were a few later plant introductions, no important economic plant was involved. In fact, the plants already present at the time of the Conquest and those introduced within the next 30 years (1522–52) comprise more than 99 percent of the agricultural production (by area planted, by volume and weight produced, and by value) in the Quiroga area. The leading crops at present are: (1) Field crops—maize, wheat, *habas*, kidney beans, barley, cucurbits, and alfalfa; (2) garden crops—cucurbits, cabbages, lettuce, chiles, tomatoes and husk tomatoes, and onions; (3) tree crops—peaches, citrus fruits, figs, apricots, white zapotes, avocados, hawthornes, and *capulines;* (4) shrub crops—agaves and cactuses.

SOILS AND EROSION

In general, the soils of Quiroga are poor zonal soils formed under mesothermal humid conditions from extrusive rocks. Specifically, subtropical reddish-brown clays and loams formed from basaltic rocks predominate. The bedrock is nearly everywhere basalt flows, brecchias, and tuffs, excepting the small areas of andesites chiefly in the uplands. A mesothermal humid climate prevails over all of the Quiroga area, characterized by a total precipitation of more than 1,000 mm. concentrated in the summer months, a moderate range of temperature, infrequent temperatures below freezing and moderate winds and evaporation. There is an in-

crease in precipitation and decrease in temperature from the lake shore to the top of Tzirate. Since mountains, hills, and slopes with a gradient greater than 3 percent occupy the majority of the area, there is rapid run-off, good drainage, considerable soil creep, and much denudation and erosion. Consequently, at present, over large areas the soil cover is thin, and frequently the A horizon has been stripped off completely. Most of the soils are residual. Next in area are the alluvial soils of the lake plain and the upland depressions or *joyas*. At one time there were extensive sheets of wind-deposited volcanic dust and fine sand, but at present the older volcanic "ashes" and sands (converted to tuffs and sandstones) are part of the basal complex underlying the residual soils. The more recent "ashes" and sands commonly are covered with thin veneers of water-transported materials. Since March of 1943 there has been deposited a considerable amount of "ash" from Parícutin. No one has measured the thickness of the ashfall in the Quiroga area, but judging from various local accounts and the deposits noted on the vegetation in the winters of 1944–45 and 1945–46 (before the rains) it must have totaled quite a few millimeters. Furthermore, many of the farmers around Quiroga have remarked upon the increased fertility of the soils since 1943. Colluvial soils have a spotted minor distribution.

Erosion has been very severe in the Pátzcuaro Basin. Many factors have contributed to this process. There is a predominance of slopes and steep gradients. The mature soils (as found on some mesas, saddles, and gentle slopes) were commonly deep and porous down to the impermeable *tepetate* (which will be defined later). Most of the precipitation falls within a period of 120 days (June to October), and this commonly comes in intense downpours of short duration with accompanying high run-off. The natural vegetation has been removed in large part. Although the Tarascans had no grazing livestock or plows before the Spanish Conquest, enormous quantities of wood were cut for their perpetually burning ceremonial fires. The well-developed delta of the Arroyo del Salto (as shown on 16th century maps) would indicate a long history of erosion and sedimentation, as would also the alluvial plains of the Llano de Santa Fe and the Llano de Tzintzuntzan. The introduction of oxen, equines, sheep and goats in the 1520's and 1530's must have materially affected the natural pasture and browse. European methods and standards of construction and heating probably increased the annual cut of pine, oak, and other trees. The woodworking industries of Quiroga (*bateas*, chests, desks, chairs, etc.) have been an increasing drain on both softwoods and hardwoods. The opening up of the national highway in the past 10 years has increased the market for charcoal. Despite remonstrances during all of the nineteenth century and various laws since the 1880's, the pernicious custom of clearing by burning (with the fires frequently getting out of control) still obtains—as it probably has since man first settled in the area. The excessive deforestation in the general area was commented on as early as the second half of the nineteenth century (Romero 1860–63; León, 1887–88). Also, changes in population and in cultivation techniques have accelerated erosion.

Possibly the change from aboriginal "hole and hill" cultivation with a planting stick and hoe to furrow cultivation with the iron-tipped wooden plow drawn by oxen has been the most important immediate agent in accelerating erosion. With the plow and its furrows came the first widescale breaking of a probably nearly continuous plant cover. Concomitant was the demand by Europeans and their livestock for wheat, barley, and other cereals and hays. Since the areas devoted to maize could not be reduced much, if at all, this demand forced an expansion of tillage into the marginal hitherto little cultivated steeper slopes. The furrows probably ran with and across the slope at the whim of the cultivator, as is still true. This was not too bad if a crop was growing during the rainy season. But from 1810 until recently, rebellion, war and brigandage caused numerous periods of abandonment of all fields at any distance from the towns and villages. In the Quiroga area the general periods 1856–76 and 1916–26 saw the most abandonment of fields.

It is virtually impossible to date the initiation of even the largest eroded areas, such as the slopes immediately to the north and east of Quiroga. Among the older inhabitants one can obtain statements varying from "The erosion began during the Revolution" (some 30 years ago), through "It was as bad at the turn of the century as it is now" (some 50 years ago), to "It was already

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bad when I was a small boy" (some 70 years ago). The majority opinion was that most of the slopes had been denuded and gullied for more than 50 years. Probably erosion has been excessive ever since the chaotic period 1856–76. Other large areas stripped of soil and much gullied include the margins of the Mesa de Atzimbo, the slopes above Caríngaro, the slopes back of Zirandangacho, the valley of the Arroyo del Salto above the Puerta de Cuenembo, and the slopes between El Tigre and Sanambo. Recent channeling and gullying has taken place in many areas of gentler slopes such as the Atzimbo-La Noria area above the falls of the Arroyo del Salto, in the area northwest of Quiroga drained by branches of the Arroyo de Quiroga, in the Tirímicua Basin, and in the Icuácato Basin.

Through erosion and denudation, probably half of the arable land of Quiroga has been removed from cultivation. The common resultant surface is composed of bare volcanic rock and *tepetate*. The word *tepetate* requires some discussion since it occurs frequently in local speech as well as in the literature of Mexican geology and pedology. It seems to have come from two Mexicano words (*tetl*=rock+*petlatl*=mat) meaning "rock-mat" or nature's flooring, or possibly from *tepetl*=hill+*petlatl*=mat. By some geologists it has been restricted to such meanings as: andesitic tuff; tuffaceous conglomerates, pumaceous brecchias, pumaceous stone; all nonmetallic earth and ore from mines; a solid layer of the earth cut like peat or quarried rock for house construction; a yellowish-white clayey substance or soft stone; rotten or decomposed rock; the impermeable horizon C often revealed by erosion; etc. In the Quiroga area this Mexicano term is widely used, and several localities are known as Los Tepetates. Apparently, in Quiroga at least, *tepetate* is applied to the impermeable soil horizon C or subsoil which is normally ½ to 1½ meters beneath the surface—but very frequently exposed by denudation and erosion. Although it is often found developing from tuffs and brecchias, apparently any volcanic mass that has begun to change into hard compact clay can be termed *tepetate*. The color varies from brick red to whitish yellow, but reds and browns are most common. It is the normally exposed "subsoil" on the slopes, and is perfectly useless for cultivation. In time it probably weathers into the *tierra charanda*, a red ferruginous clay.

The rocks of the area are about 99 percent silicates. The feldspars or silicates of aluminum comprise about 68 percent, and olivine, amphiboles, and pyroxenes constitute nearly 32 percent by weight of the rocks. Plagioclase makes up about six-sevenths of the feldspars, the remainder being orthoclase. Calciclase (labradorite and bytownite predominantly) constitutes more than two-thirds of the plagioclase, the sodaclase being principally andesine. The next important ingredient is magnesium silicate or olivine. There are relatively small quantities of diopside, hypersthene, bronzite, augite, and hornblende. Various iron oxides (magnetite, ilmenite, and hematite) complete the list of notable minerals in the rocks of the area. Very small quantities of sulfates, nitrates, carbonates, chlorides, and phosphates occur, as well as a little gold, copper, silver, lead, vanadium, nickel, chromium, barium, and tin—free or in combinations. This means that the 12 or 15 elements most commonly found in the rocks of the earth's crust (oxygen, silicon, aluminum, iron, calcium, magnesium, sodium, potassium, titanium, hydrogen, phosphorus, carbon, manganese, sulfur, and chlorine) occur in approximately that order in the Quiroga area.

The feldspars in the rocks alter through weathering to hydrous aluminum silicates (kaolinite or claylike substances), calcite, sodium carbonate, potassium carbonate, white mica, and quartz. The olivine becomes serpentinized, as do the amphilboles and pyroxenes, and iron oxides, calcite, iddingsite, chlorite, epidote and quartz are formed. In time such soluble minerals as calcite, potassium hydroxide, and magnesite are removed in solution, which leaves a final mixture of quartz, claylike substances, and iron oxides. These are the principal components of the soils in the area. In other words, the gross body of the soils is composed of a mixture of grains of quartz and particles of clay—commonly colored red or yellow by iron oxides. Within this Si-O-H-Al-Fe matrix are minor elements and compounds altered or introduced by water, air, plants, and animals. The most important of these are organic carbon, nitrogen, calcium carbonate ($CaCo_3$), sodium carbonate (Na_2CO_3), sodium chloride (NaCl), sodium and calcium sulfates (Na_2SO_4) ($CaSo_4$) in negligible

quantities, and compounds of phosphorus, potassium, magnesium, manganese, titanium, and barium.

No scientific study has been made as yet of the soils of the Quiroga area. However, the Secretaría de Agricultura y Fomento (guided by the under-secretary González Gallardo, an outstanding soil scientist) and the Comisión Nacional de Irrigación[3a] (Departamento Agronómico) during the past 20 years have initiated a modern scientific study of Mexican soils. Since the money, staff, and time available have been restricted, most of the study has been in the larger areas subject to irrigation and development. This means that the porous mountain lands of volcanic origin, the steeper slopes, and the small upland valleys will not be studied for some time. Nevertheless, nearby areas in the Río Grande de Morelia, Zacapu-Río Angulo, and Lower Lerma-Chapala Basins have been studied and reported upon; and several generalized soil maps of Mexico exist. During 1945 and 1946 we obtained soil samples (the analyses of four of which are given below), took numerous field notes, and discussed soils with farmers in different parts of the area. Our information and conclusions are summarized herewith.

Locally there are many ways of classifying lands and soils—by texture, color, form of use, location, water content, saline content, humus content, productivity, etc. A mixture of Spanish, Tarascan, and Mexicano words is employed. Some of the more common terms are as follows:

Texture and structure

English and scientific	*Spanish and Indian*
Claypan or substratum	*Tepetate*, caliche.
Clay	Arcilla.
Crumby structure	Migajón.
Clay loam	Migajón arcilloso.
Ash; loess	Ceniza; légamo.
Silt; dust	Limo, lama, fango; polvo.
Alluvium	Alluvión.
Silts	Limos, polvillos.
Loam, open soil	Suelo franco.
Silt loam	Migajón limoso.
Sandy loam	Migajón arenoso
Sand	Arena, *cutzari*.
Gravel	Grava.
Pebbles; rocks	Guijarros; piedras.
Rocky soil; scabland	Tierra pedregosa; malpais.
Heavy; light	Pesado; liviano.

Color and chemical content

English and scientific	*Spanish and Indian*
White; grayish	Tierra blanca; pardusca.
Yellow earth	Tierra amarilla, *tupura*.
Red earth	Tierra roja, colorada, bermeja, *charanda*.
Brown earth	Café, café obscuro.
Black earth	Tierra negra, prieta.
Oakleaf humus	Tierra *tocura*.
$CaCO_3$, $MgCO_3$, $NaNO_3$ impregnated soil.	Caliche, *tepetate* (in part).
Calcareous, $CaCO_3$	Suelo calcareo, calizo, cal, *tizate*
Gypsum	Yeso, *uiras*.
Black alkali; Na_2CO_3 and other carbonates.	Alcali negro, *tequesquite*.
White alkali; chlorides and sulfates of Na, Mg; chlorides of Ca, K.	Alcali blanco, salitre.

Water content, use, position

English and scientific	*Spanish and Indian*
Swampy	Pantanoso, cienegoso.
Moist, humid	Tierra de humedad, jugo.
Irrigated	Tierra de riego.
Slime, mud, clay	Limo, lodo, barro, *atsimu*.
Not irrigated	Temporal.
Dry	Seca.
Lowland, plain	Bajo, llano, plan.
Slope	Ladera.
Hilly, rough	Cerril.
Farmland, cropland, field, plot.	Tierra, labor, *milpa*, *tareta*, terreno.
Soil; floor	Suelo; *echerendo*.
Earth; soil	Tierra; *echeri*.
Pasture	Pastal.
Scrubland	Monte bajo.
Woodland	Monte alto.

Productiveness, miscellaneous

English and scientific	*Spanish and Indian*
First class	1ª clase; jugo or humedad; polvillas; migajón; alluvión; riego; *tamaquatarca*.
Second class	2ª clase.
Third class	3ª clase.
Fourth class	4ª clase.
Tropical, hot	Tierra caliente.
Subtropical, warm	Tierra templada.
Temperate, cool	Tierra fría.
Microthermal, cold	Tierra helada.
Forest brown	Café de bosque, café forestal.
Oak forest; pine forest	Encinal; pinal.
Prairie, savanna	Pradera.

Many of the above-listed terms are used in combination; e. g., *temporal de primera* (unirrigated land of good quality, dependent upon the summer rains), and *riego de segunda* (second-class irrigated land). The most common sets of classi-

[3a] Since this monograph was written these two entities have been changed to: Secretaría de Agricultura y Ganadería and Secretaría de Recursos Hidráulicos.

fications are: cultivated lands according to water content (jugo, riego, temporal), noncultivated lands according to use and vegetation (pastal, monte), arable soils according to productivity (1^a, 2^a, 3^a, 4^a), soils according to color (charanda or colorada, café, amarilla or tupura, negra or prieta), and soils according to texture (arcillosa, migajosa, arenosa, pedregosa). None of these classifications is scientific or gives an adequate idea of the contents and lacks of the soils.

Locally it is estimated that about 32 percent of the municipality is woodland and brushland (*monte*), 27 percent scabland and miscellaneous nonusable, 21 percent pasture land (*pastal*), and 20 percent arable. The arable land (*tierra de labor*) is composed of *temporal* (about 88.65 percent), *humedad* (nearly 10.85 percent), and less than one-half of 1 percent of *riego*. The *tierras de humedad* are soils in which the subsoil moisture is maintained for a long time after the rainy season by infiltration from exterior sources. Most of such soil areas are near springs, in the lowlands near the lake, and in some of the *joyas* or depressions of the uplands. Most of the *riego* and *humedad* soils are reddish to grayish sandy loams and silts among which the silty alluvial and aeolian *polvillas* are most important. Every rainy season large quantities of extremely fine reddish silt are spread over the lake plains and are deposited in the lake. This silt derives from the erosion of the volcanic soils and rocks of the area, and is moderately rich in organic matter. The *tierras de primera clase* embrace nearly all of the *riego* and *humedad* soils, and most of the *temporal* soils of the higher lake plain, the lower, gentler slopes around Quiroga, and the bottoms and lower slopes of the upland valleys. The remaining grades of *temporal* (second, third, fourth) represent decreased productivity which is a function of excessive use and of steeper slopes. Most of the temporal soils grade from *tierras tepetatosas* and *arcillas* in denuded areas, through clay loams, to sandy loams. The reddish colored clay loams predominate.

In terms of scientific classification, the soils of the Quiroga area are predominantly subtropical and temperate humid (wet-dry) climate (Cwbg of Koeppen; B (p) B'_2 (a′) of Contreras Arias-Thornthwaite) pedalfers, with practically no pedocals, and only a thin band of hydromorphs and alluviums along the lake. The deep, friable soils developed *in situ* from the basic volcanic rocks seem to fall within the group of laterized soils. These lateritic soils are chiefly reddish-brown clays and loams with some development of yellow-brown and yellow soils. In the forested highlands the yellow, brown, and gray-brown soils developed under the pines and in the oak-pine-madroño association grade from lateritic into podzolic soils. Northeast of Quiroga, and outside of the Pátzcuaro drainage basin, there is some development of reddish-brown prairie soils—as in the area just beyond the Cerro Hueco. In a few undrained depressions and immediately along the lake shore are gleized soils approaching meadow (Wiesenboden) and half-bog types. There are no important areas of halomorphic soils, since practically all of the area is well drained. The alluvial soils have been mentioned previously.

Table of Quiroga soils

Zonal:	
Pedalfers:	
Lateritic:	
Reddish-brown clays.	Suelos (arcillas) rojos.
Reddish-brown loams.	Migajones rojos and café-obscuros.
Yellow-brown soils.	Suelos café-amarillantes.
Yellow soils	Suelos amarillos.
Brown forest soils	Suelos café forestales.
Podzolic:	
Gray-brown forest soils.	Suelos café-parduscos de bosque.
Yellow forest soils	Suelos amarillos forestales.
Pedocals:	
Reddish-brown prairie	Suelos de pradera.
Intrazonal:	
Hydromorphic:	
Meadow and half-bog gleis.	
Azonal:	
Alluvial silts	Alluviones, limos, polvillas.

Most of the soils have well-developed profiles. The normal sequence is an A horizon of loam, a B horizon of soft clay, a C horizon of hard, impermeable clay or *tepetate*, and the underlying bedrock. A hardpan or *piso de arado* is commonly encountered in the lowland fields, owing to generations of cultivation to the same depth with iron-tipped wooden plows. Because of the extreme amount of sheetwash and gullying, large areas are lacking the A horizon, and considerable areas have surfaces of the C horizon or *tepetate*. Furthermore, al-

though shallow plowing does not mix the *tepetate* with the upper horizons, the denudation of years has deposited upon the lowlands quite a bit of poor soil derived from the *tepetate* of the slopes. In general, the soils range from very deep near the lake to extremely thin on the upper slopes, and have an average thickness of only a few inches.

Red is the dominant color of Quiroga soils. This red varies from brick red, through reddish brown, to a yellowish red. There are many places carrying such names as *Cerro Colorado* and *Tierra Colorada* in the region. The most common shade of red is reddish brown or *café*, which probably constitutes the color of more than three-fourths of the soils. Normally, dark reddish brown or *café obscuro* is a good soil, light reddish brown or *café* is intermediate in value, and the red (*charanda*) and yellow (*amarilla, tupura*) soils are poor. The reddish color is derived from unhydrated iron oxides and indicates good drainage and aeration. The yellow soils are restricted to the highlands, commonly in pine-forested areas, as on the slopes of Azul, Chino, and Tzirate, and commonly represent hydrated iron oxides. These yellow soils usually are poorly drained and contain much organic acid. There are areas in the oak-pine-madroño association on the upland slopes where the duff and mull have produced rich but shallow soils known locally as *tierra negra* or *prieta* and *tierra tocura* (from *tocuz*, an oak). These soils are seldom cultivated. Beneath the forest matting, especially at the higher elevations, are poor grayish soils.

The soil varies from heavy, dense compact clays, through the crumb-structured medium-heavy clay loams, to the light open sandy loams. The heavy clays are adhesive, form large hard clods, and are hard to work. The clay loams are normally plastic, form hard clods, and are not too hard to work. The sandy and silty loams are not plastic at all, and are light and easy to cultivate. The *tepetate* and the clays immediately above it are practically impermeable, but the less dense clays and the loams have a high percentage of porosity (commonly 45–53 percent). The water-holding capacity of the clay loams is fairly high. Most of the cultivated soils have no pebbles, little gravel, from 35 to 50 percent sand, 15 to 30 percent silt, and 25 to 50 percent clay. The mean probably runs 41 percent sand, 36 percent clay, 22 percent silt, and 1 percent gravel. Clays and clay loam dominate the soils of Quiroga. The silt content is too low and the clay content is too high for good soils.

Mineral soils predominate in the Quiroga area. The originally basic rocks of the area have decomposed into somewhat leached soils which are essentially neutral, although the pH or acidity factor usually runs between 6.6 and 7.0. This falls within the optimum range 6.5 to 7.2. In the oak and pine-forested highlands the pH factor may drop as low as 5 or 4, but on the slopes of infiltration and the lowlands of deposition there are soils with alkalinity up to 8. The very harmful black alkalis or *tequesquite* have been fairly well leached out of the soils, although percentages from 0.01 to 0.05 are common. The other harmful alkaline salts such as sodium chloride and sodium sulfate are also nearly negligible in the soils of the area. The calcium carbonate content is rather low for a good soil, but the available calcium is usually adequate. Organic carbon, and organic material in general, is definitely deficient in most of the soils. Available nitrogen and potassium are deficient, but there

TABLE 25.—*Analyses of soil samples* [1]

Item	Analysis of indicated sample			
	No. 1	No. 2	No. 3	No. 4
Color	Dark coffee	Dark coffee	Coffee	Dark coffee
Porosity ..... percent	48.09	46.56	.....	50.00
Pebbles ..... do	0	0	0	0
Gravel ..... do	2.20	2.19	.64	1.13
Sand ..... do	41.50	42.50	39.50	46.50
Silt ..... do	29.64	23.64	17.64	20.64
Clay ..... do	28.86	33.86	42.86	32.86
Texture	Clay loam	Clay	Clay	Clay
Water retaining capacity ..... do	26.97	26.97	.....	27.63
Available water ..... do	21.22	21.17	.....	19.88
Na_2CO_3 ..... do	.01	.01	.04	.05
NaCl ..... do	.02	.01	.02	.01
Na_2SO_4 ..... do	0	0	0	0
$CaCO_3$ ..... do	.65	.78	.41	.71
$CaSO_4$ ..... do	0	0	0	0
Organic carbon ..... do	1.58	1.09	.73	.91
Organic material ..... do	2.72	1.88	1.26	1.57
Total nitrogen ..... do	.14	.13	.08	.07
P available ..... p. p. m [2]	110	110	110	140
K available ..... do	335+	335+	335+	335+
Ca available ..... do	1,650	1,650	1,375	1,375
Mg available ..... do	140	98	55	55
Mn available ..... do	35	28	35	28
pH	6.87	6.98	6.71	6.83
Bacterial flora	0	0	0	1
Common name	1ª Temp.	2ª Temp.	3ª Temp.	2ª Temp.

[1] The four analyses are considered to be representative of the majority of the arable soils of the Quiroga area. Numbers 1, 2, and 3 come respectively from the plain, lower slope, and intermediate slope of an upland valley in the area (La Noria-Atzimbo). Number 4 is from the higher lake plain south of Quiroga (La Tenería) and represents one of the longest cultivated soils in the area. The soils were collected in June of 1945, and were analyzed in May of 1946 by technicians in the Soil Laboratory of the Dirección General de Agroeconomía, Comisión Nacional de Irrigación. The writers are much indebted to the staff of the Comisión Nacional de Irrigación and to Undersecretary of Agriculture, Alfonso González Gallardo. A background on the soils of Mexico, and edaphology in Mexico, can be obtained from reports of González Gallardo (1941); Waitz (1942); Foglio Miramontes (1936); and Rodríguez (1942).

[2] P. p. m. = parts per million.

usually is ample phosphorus, magnesium, manganese, and sulfur. The bacterial flora is not sufficient. In general, the Quiroga soils need lime, gypsum, organic carbon, nitrogen, potassium, bacterial flora, and possibly boron, copper, and zinc.

GENERAL FARMING PRACTICES

Most of the fields and parcels are within 2 miles of the homes of the farmers, whether they live in Quiroga town or in the ranchos. However, the *ejidatarios* must walk from 3 to 7 miles to reach their parcels, and a few residents of Quiroga farm on the Cerro Azul and north of La Tirímicua at distances between 3 and 5 miles. There are no permanent habitations on or near the fields excepting when the fields approach the margins of town or the rancho settlements. Even in the latter case the home of a farmer is normally not on or adjacent to his field. Most farmers have no structures on their fields, excepting a tiny shelter (which varies from a brush and mat leanto to a miniature house with roof of shake or tile, and adobe or loose stone walls on two or three sides) which is occupied by some member of the family during the period just after planting (to keep birds and other animals from digging up the seeds), and again as the crop ripens just before the harvest. Even such ephemeral structures are lacking in a majority of the fields, and the watchers either camp out in the open or are replaced by scarecrows of various types. A few of the wealthier landowners have erected large storage buildings or barns (known locally as *jacales*), but there are not more than five or six of these in the entire area. The typical *jacal* consists of an elevated tile roof (either of one or two sheds), supported by high adobe walls (usually the adobe bricks are arranged so as to leave many openings on one side for ventilation), which covers two or three units or rooms. The largest unit is commonly used for the storage of maize fodder, wheat straw, bean hay, etc. The second unit houses the plows, yokes, harness, and other farming tools. Sometimes a third carefully built unit serves as a granary. Quite often a cattle corral and a threshing floor are nearby.

Practically all fields which border main roads have some sort of fencing. In the lowlands there is considerable use of two- and three-strand barbed-wire fences, which commonly are punctuated by coral trees, yuccas, agaves, and *chupires*. These items of vegetation probably represent remnants from the pre-barbed-wire period. In the ranchos and generally throughout the highlands the fences may be of loose stones piled up into walls between 3 and 5 feet in height, of logs and poles, of hedges composed of natural vegetation allowed to grow freely, and of cut brush. Fine masonry walls or fences such as can be seen on some of the former haciendas in other parts of Mexico are lacking. Adobe walls are used only in the settlements to enclose *solares*. The tall *cardón* or *órgano* cactus is lacking outside of the settlements, and consequently this typically Mexican form of fence is lacking. Although agaves are to be seen along fence lines throughout the area, there are practically no rural fences composed entirely of alined *magueyes*. When one large field is subdivided, or is farmed by two or more different individuals, there is commonly no fencing and the line of demarcation is indicated merely by stone or wooden markers at each end or side of the field. If the fields are under cultivation there will be a narrow strip of unbroken soil (*omecua*, which is the Tarascan word for island) between the cultivated patches. In the lowland fields of good soil this *omecua* is often reduced to a ridge less than a foot in width. Probably the typical Quiroga fence is the above-mentioned stone wall. In this land of volcanic flows there is no dearth of fragments of vesicular lava rock. These stones are piled in graduated fashion, with the largest at the bottom in one or two rows, so that the wall tapers upward. Perhaps the mean dimensions are 3 feet in width at the base, about 1 foot at the top, and a height of around 4 feet. Commonly no gaps or spaces are left for gates, and when entry is desired it is necessary to remove enough stones (usually near a corner) so that a man can step through. If animals are to be admitted several more stones are removed, and the oxen, horses or burros, pass through singly. Small boys, hunters, people taking a short cut, and trespassers such as ourselves, usually try to climb over these fences, and the normal result is an avalanche of the loosely piled stones. Just as in our range-cattle States every decent citizen closes all gates he has opened, so in Quiroga the conscientious trespasser will rebuild every wall he knocks down or tumbles over. If a field is not under cultivation, one or more temporary "gates"

usually will be left open. Where formal gates exist they are usually of two styles. The simplest gate is the *puerta de trancas* which consists of two side posts with as many rectangular perforations as the number of cross pieces or *trancas*. When the gate is closed all two to six poles are inserted in their proper slots. The normal number of poles or *trancas* is four, and when the gate is opened usually only the upper three poles are pulled out of the slots on one side and man and beast enter by stepping over the bottom *tranca*. A more elaborate gate is the *puerta de golpe* (push gate) which occurs in many forms. The principal elements consist of the two lateral gate posts, a turning stone or butt hinge upon which the lower end of the gate frame turns, and a frame or gate proper. The gate frame is based upon a carefully selected piece of wood (usually oak) whose upright portion becomes the inner turning post, and which has a limb that curves out upward and to the right. Other pieces of wood are attached through insertion in slots and by binding with withes. Usually no metal is involved in the construction of these gates. The gate frame is attached to the left-hand (as viewed from the outside) gatepost by two or three bands which usually are of withes, sometimes are of leather, and rarely are of wire. When a small roof is erected over such a *puerta de golpe* or any other type of gate it is known as a *portón* or *zaguán*. These roofs are made of a wooden framework covered by shakes or tiles on two sheds or slopes. Sometimes a space is left open under the roof, and this space serves as a temporary storage place or granary. *Portones* are more common in the settlements than in the fields, and are far more common in Guerrero and Michoacán than in any other part of Mexico.

The size of the individual cultivated field or parcel varies greatly. We were unable to determine the mean and modal sizes of the cultivated parcels scattered over the Quiroga area. Perhaps the bulk of the cultivated land is in parcels of between 2.25 and 6.5 hectares, but this is little more than an informed guess. There are quite a few parcels of less than 1 hectare, and there are several with more than 20 hectares. Most of the cultivation units are worked by two or three individuals (commonly members of one family), with an additional one or two temporary workers being hired if necessary during the periods of plowing, planting, and harvesting. The *jornaleros del campo* average $2 a day (for all types of farm labor), although there seemed to be a range from $1.50 to $2.50. Farm equipment is simple, although there is considerable range from farmer to farmer. The man who owns his farm commonly possesses one wooden plow and accouterments, one machete or brushhook, one ax, one pitchfork, one flat shovel or spade, and an assortment of rawhide thongs, cordage of *ixtle* (agave fiber), harvesting bags, sacks and cloths (*ayates*). Usually there is no wheeled vehicle, not even a two-wheeled cart. The average proprietor also owns a yoke of oxen, and possibly a burro or horse.

The renters or sharecroppers (*medieros*) usually possess all items mentioned above excepting the pitchfork and spade (which will be borrowed or rented) and the animals (which are rented). There seem to be two types of share-cropping contracts: on good lands the *medieros* pay for the seed, rent the work animals, undertake all necessary work, and return one-half of the crop to the owner of the land; on poor lands the owner supplies the seed and the work animals. The wooden or Egyptian one-handled plow of this region has been described and illustrated in detail in an earlier report of this series (Foster, 1948, p. 60), so it will suffice to say that it consists of seven pieces of wood and a steel plowpoint or share (*reja*). The main piece or *cabeza* (combined handle, foot, or body that slides over the ground, and point or share) is adjusted to the plow shaft and an *orejera* or clod spreader by a system of wedges which regulate the depth of plowing between skimming the surface and a depth of about a hand span. The plows and yokes are usually made of oak; it takes 3 days to make them, and they commonly last about 3 years. The *reja*, which is a pointed steel shield which is fitted over the plow point, is about 9 inches long, costs 7 to 8 pesos, and is purchased in Quiroga or in one of the larger cities (Pátzcuaro and Morelia). Both plows and *rejas* are made in Quiroga. The wooden yoke is lashed to the plow shaft and to the horns of the two oxen with leather thongs and ropes. An inevitable accompaniment of plowing is the goad or prod (*garrocha*) of cane (*otate*) with metal point (*gorguz*) at one end for prodding the oxen, and a leather button at the other end. Some *garrochas* have a metal blade for cleaning the *reja* and inserting in the ground as a marker instead of the button.

Machetes vary considerably in shape, size, and manufacture—from short straight knives (commonly manufactured in Connecticut) to long slightly curved *bolos* and deeply curved medium-sized *garabatos*. The two latter forms are usually of Guerrero manufacture and probably represent a carry-over from the days when *arrieros* from Quiroga frequently made the trip to the Guerrero coast. However, machetes are not so numerous or important in the highlands of Michoacán as in the thorny scrub country of the *tierra caliente* in southern Michoacán and in Guerrero. The axes, occasional mattocks, pitchforks, and spades and shovels are usually of local manufacture and are rather crude. The cords, bags, and cloths of *ixtle* commonly come from Guanajuato, Queretaro, and San Luis Potosí. Leather thongs and ropes are made locally.

SOILS AND FERTILIZATION

Most of the fields now in use have been cultivated for centuries, probably since shortly after the Conquest when acquisition of the good lowland lands by the Spaniards forced the Indians onto the slopes and into areas somewhat remote from their settlements. Very little new land is added by clearing the forest and scrub (*monte*), and even such lands are suspect. A great deal of the scrub and timber on the slopes near Quiroga seems to be a "second growth" probably several times repeated. All of the soils in the Quiroga area are deficient in one or more plant nutrients. However, very little attempt is made to fertilize the soil. Where a field has been allowed to lie fallow for several years and thus accumulate a considerable cover of vegetation there is fertilization through the organic matter which is plowed in, and the deficit of potash is made up from the ashes of the brush cover which was burned. The normal sequence in such cases is to chop down the brush in the winter months (December, January, and February), let it dry for a time, fire the dried brush in March and April, and commence plowing in May. This clearing and fertilizing by fire (*la quema*) has been prevalent for centuries, and despite State and Federal laws against such fires (which frequently get away and burn up good timber) since the 1880's the practice continues. While we were in Quiroga we noticed smoke and fires in the highlands beginning about March 27, which continued for about a month, and a number of these fires did damage to the pine and oak forests. This practice is by no means local, and over much of Mexico at this season the atmosphere is clouded with a smoky haze. The lands that have been cleared for some time are kept productive by rotating crops, allowing them to lie fallow, and by adding animal manure. The common sequences in about two-thirds of the lands (especially in the ranchos) are: (1) To plant one crop of maize or wheat or barley, rest a year, plant *habas*, rest a year, and then repeat the sequence (for poor lands); or (2) to plant wheat (September–May) followed by maize (May–December), rest a year (that is, from December to May), plant *habas* (May–January) followed by maize (May–December), rest a year (from December to September), and then repeat the sequence (for lands of intermediate quality); or (3) to plant fall wheat followed by spring maize, rest a year (December–September), and then repeat the rotation (for fairly good lands). This rotating with *habas*, and the interplanting of kidney beans with the maize, probably provide all of the nitrogen needed. Only on the best lands in the upland basins or *joyas* and in the lowland fields of the Llano de Tzintzuntzan are crops planted every year on the same fields, and this is made possible by extensive manuring of the fields and by enrichment of the soils through sheetwash and the deposition of silt washed down from the slopes. However, not all of the deposition from sheetwash is beneficial, since some of the adjacent slopes have only sterile *tepetate* surfaces. Manuring is carried out in two ways: (1) by pasturing livestock on the unharvested maize stalks (*rastrojo*) left standing in the fields, and (2) by hauling in many *cargas* (animal loads) of cattle manure from the corrals (*estiércol del corral*). The latter form is laborious and expensive, and is done only by the richer and better farmers on the best available lands.

One might summarize the condition of the cultivated soils in the Quiroga area by saying that in texture and acidity and alkaline content they are close to the optimum; but in general the soils are too thin or shallow; there is frequently a deficiency of moisture in the soil; and usually nitrogen, potassium, lime, gypsum, organic carbon, and certain metals could be added with profit. The utilization of wood ashes and manure, and rotating or interplanting with legumes, probably take

care of the deficits in nitrogen and potassium, and the calcium lack is not marked. If the soils are kept up they are appropriate for the principal crops now raised in the area. The basic difficulties are a lack of sufficient soil (in depth and in area) and insufficiency of water, and both of these conditions are due chiefly to the cutting of timber and clearing of fields on the upper slopes. With much of the vegetative cover gone the waters of the rainy season are not held back and absorbed, and the accelerated run-off keeps adding to the area of gullied and denuded slopes. A number of preventive and corrective measures are possible. Cutting of trees, pasturing, and cropping on the upper slopes should be discontinued. The value of the wood, pasture, and crops obtained from these submarginal lands is quite small. The people who formerly made a livelihood in those areas could be put to work by the State planting wood lots of eucalyptus (which does quite well in the area) to provide fire and post wood, building check dams at the heads of the gullies, and planting cover crops on the nearly denuded slopes. Several tropical forms of drought-resistant *Lespedeza* and kudzu (*Pueraria*) have been developed which cover the ground completely within a few months, and which provide not only soil cover but also forage and hay, and they enrich the soil with nitrogen. Other legumes which provide cover, forage, and nitrification of the soil are certain clovers, *Crotalaria*, lupines, and the vetches. All of these should do well in the area since there are numerous closely related wild forms. Temporary relief from the water shortage can be obtained by placing a number of windmills over shallow wells along the lake margin, and pumping the lake water (through a series of windmill-powered lifts) into reservoirs in the canyons above Quiroga whence the water could be led by gravity canals to the majority of the fields around Quiroga. So long as the soils are shallow it would be a mistake to alter the present method of shallow plowing with wooden plows, but plowing should be discontinued completely on the slopes since even contour plowing is not sufficient to prevent wash. The ideal situation would be to have every individual field tested as to the chemical content of the soil before prescribing the proper fertilizers. Such crops as soybeans and sorghums probably would produce well in the area, and there is great need for improving the strains of maize, wheat, and beans. Drastic remedies are indicated for the sick soil and agriculture of the region. From colonial times to the present there has been a steady decline in soil fertility, and just since the 1880's the Quiroga area has lost about 30 percent of its productive capacity (comparing yields of maize and wheat per unit quantity planted).

FIELD CROPS

Everybody agrees that the chief field crops, in order of acreage planted, are maize, wheat, *habas*, beans, followed by either barley or cucurbits, and alfalfa. However, there is absolutely no agreement as to what the actual acreages are nor what the average annual production of any crop may be. We have already outlined the methods of land description, and it is obvious that in most cases the people honestly do not know how much land they own or cultivate in terms of hectares or other units of the land itself. They are accustomed to measuring the land indirectly in terms of how much seed is planted. Consequently we have long lists of how many liters of maize, wheat, and other crops were planted, but very little certain information as to the areas involved. It is not possible to convert liters of maize, for example, into the number of hectares planted in the Quiroga area since the amount planted per unit of area varies greatly with the location and richness of the soil. We have determined some approximate means for statistical purposes, but they are nothing more than approximations which may be as much as 20 percent off in either direction. Production is often stated in terms of returns per unit planted; e. g., 30 for 1, which may be 30 liters for 1 liter or 30 *fanegas* for 1 *fanega*. The difficulty in this case is that the yields or returns vary tremendously from one year to another and from one field to another. Even when we obtained a total figure for some person's harvest the figure would be rendered suspect either by our own observations or by checking with neighbors and merchants to whom the crop was sold. There is a deep-seated reluctance to let any outsider know the true amount of production or income which stems from generations of sad experiences with tax collectors, the collectors of the church's tithes (no longer legal), revolutionaries in need of supplies, and others of similar ilk. To further complicate the picture of acreages and productions are the various sequences of crop rotation and fallow which

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obtain in different portions of the Quiroga area. With these preliminary observations out of the way we will try to set forth the statistics of field cropping in Quiroga. Of one thing we are certain, that our figures are better than most official figures that have been compiled for the area at the times of the various censuses, because those figures were compiled by remote control.

UNITS OF AGRICULTURAL MEASUREMENT

The system of agricultural measures of area, capacity (volume), and weight is in a state of anarchy because of the variable conversions of old Spanish units into units of the recently adopted (only about 50 years officially) metric system. The conversions are variable (1) because of the fact that the old Spanish units varied from one province of Spain to another, (2) because of variations in the weights and sizes of different grains (with which we are familiar through the different weights of a bushel), and (3) because of individual variations in amount of grain planted per unit of area. During the colonial period and until about 1896 it was customary for an official to make an inspection (*visita*) once a year to each jurisdiction or municipality and check the local standards of weights and measures against master units which he carried with him. This was known as the *visita de fiel contraste*. During the nineteenth century each *ayuntamiento* of a municipality kept a number of weights (marked pieces of metal) and boxes of different volume content which served as the standards for the municipality. In 1869 Quiroga adjusted its local grain measures (*medidas para semillas*) to the standards obtaining in Morelia, but despite this adjustment there are numerous differences today between values in Morelia and in Quiroga, and even from one part of the Quiroga municipality to another. The basic measurements of volume were a small lidless and strongly constructed wooden box which held approximately 2 liters, and another which held about double this amount. These units were termed *cuartillo* and *cuarterón*, and the *cuartillo* originally represented the fourth part of a *celemín* or Spanish peck, which in turn was about the twelfth part of a *fanega* or Spanish bushel. Apparently the present sizes or capacities of these measures have been altered so as to conform with certain even parts of the metric system, e. g., 50 *cuartillos* make a *fanega* of 100 liters in most cases.

The *medida* is the actual metric counterpart of the double-*cuartillo* or *cuarterón*, and contains 5 liters of dry measured grains. In table 26 we give the range in interpretation current in the Quiroga area; those values that are official or which are most commonly accepted in the case of several values are shown in italic. We have not presented the units of planting area since there is extreme variation in this group of measurements. For example, a planted bushel of maize (*fanega de sembradura de maiz*) seldom conforms with actual practice, and is valued from about ½ (0.64) to 4 (3.6) hectares. Also, a *tercio de sembradura de trigo* (a planting unit for wheat) varies from about 4 to 8 hectares and a *yunta de sembradura de trigo* (yoke—of oxen—of wheat planting) varies from about 3.5 to 6.0 hectares.

TABLE 26.—*Agricultural weights and measures*

VOLUME OF CAPACITY[1]

Unit	Maize	Wheat	Beans	Habas	Miscellaneous
	Lit.	*Lit.*	*Lit.*	*Lit.*	
Almud	7. 5–8. 0				
Carga	200	200–*210*–220		200	
Cuarterón	2–*4*	4			
Cuartilla	25		25	25	
Cuartillo	0. 5–*2. 0*				
Fanega	100	105	100	100	Ca. 2.58–2.84 bu.
Hanega and anega (the same as fanega).					
Hectólitro					100 litros.
Litro					0.91 dry qt.
Media	50				
Medida	5	5	5	5	
Ochavo	1–*2*				
Saco				150	
Tercio		100–*110*			

WEIGHT OR MASS

	Maize	Wheat	Beans	Miscellaneous
	Kg.	*Kg.*	*Kg.*	
Almud	5. 6+			
Arroba	11. 506	11. 506		25.36 lb.
Carga	136–138–*140*	160–*161*		
Cuarterón	1. 4–*2. 8*			
Fanega	*68*–70	80	80	
	Lit.	*Lit.*	*Lit.*	
Kilogramo	1. 47	1. 31	1. 25	2.2 lb.
	Kg.			
Litro	. 68–70.			
Quintal				46 kg. or ca. 101.47 lb.
		Kg.		
Tercio		80. 5		

[1] Values that are official or which are most commonly accepted are in italic.

MAIZE OR INDIAN CORN

The chief crop since prehistoric times has been maize or Indian corn (*Zea mays*), which is commonly termed *maiz*, although the Tarascan name *tsiri* is used occasionally. From a check of the fields, a number of home granaries, stores kept by

merchants, and through general questioning, it appears that of the various classic types or subspecies of maize only dent and flint are cultivated in the Quiroga area. These two types intergrade so that the maize kernels are dent, semident, and dentless flint. In general, all of the maize falls into the type recently named Mexican Pyramidal. The majority of the kernels are dented and tapering ("pointed"), and next in number are the kernels which are rounded and semidented. There are five major color types and various gradations or blends (hybrids). The most common type is yellow maize (*maiz amarillo*), also known as native maize (*maiz criollo*), which grades imperceptibly into the second type called *maiz blanco* or white maize. Actually these two color types represent the extremes of color variation within one general type, and many of the farmers recognize this fact and refer to the same maize by all three names listed previously. A subtype with a smaller kernel which is commonly planted at the higher elevations is known as *maiz amarillo delgado*. This may represent an introduced strain from the high valley of Toluca, or it may be merely a locally selected variant. The above type or types constitute at least four-fifths of the maize planted in the area. A third color type, *maiz colorado* or red maize, appears to be merely a color mutant of the *maiz criollo*. The fourth color type, *maiz prieto* or black maize (actually a blue to purplish black), is definitely distinct from the previous types in having a majority of its kernels rounded and semident, and in containing a higher sugar content in its stalks. Possibly this maize is descended from the prized strain whence the ancient Tarascans obtained a sweet juice or sap which was boiled down to sirup and also converted into a fermented drink (the *pulque de tlaolli* of the Mexicans). *Maiz prieto* is comparatively rare in Quiroga, although we observed quite a few plants of this type in the higher fields of Santa Fe on the slopes of Tzirate. Probably the cooler growing conditions increase the sugar content of the stalks. The last color type is nothing but a mixture of the previous types which gives rise to *maiz pinto*, which has two or more colors represented in the kernels of one ear. From some sampling it appears that the kernels are arranged in from 8 to 20 rows, with the modal number being 12 or 14. The plants vary from 1 to 4 meters in height, the lesser heights apparently representing merely inferior growing conditions. It is not possible, from the early sixteenth-century records, to determine what were the indigenous types of maize, since maize was described only in terms of colors. There were reported to be colored (*colorado* could mean merely red, or it could refer to any intense or brilliant color such as black, red, and yellow), white, and spotted (*pinto*) types. The use of the term *pinto* would imply that more colors were represented than merely white and red. Tradition, as well as the more ceremonial usage of *huauhtli* (*pari*) grains, indicates that the Tarascans had the cultivated amaranths before they acquired maize. Possibly the ancestral Tarascans were already in the Michoacán area when they first acquired maize, but it is equally possible that they found maize already being cultivated when they immigrated from their unknown homeland. There are a number of fascinating identities and similarities between the prehistoric cultures of southwestern Mexico and those of the northwestern portion of the so-called Incan Empire (prior to the development of this empire), among which is the similarity of the Quechua and Tarascan words for maize (*sari* and *tsiri*). Although the origin of dent maize is not known, and the role of teosinte has been challenged by Mangelsdorf and Reeves (1939), the region of upland valleys from Jalisco to Oaxaca is still as good a candidate for origin-area as any. In this connection the prevalence of teosinte in the Pátzcuaro Basin is of interest. Teosinte (*Euchlaena mexicana* Schrad.) is quite common in the lowlands around Quiroga, principally in the fields and at the margin of fields northwest and west of the Cerro Huarapo, near La Tepóricua, and in the fields above the Cerro de La Cruz. It was so abundant near the Cerro Huarapo in December of 1945 that we were able to collect about a half bushel of kernels in less than 2 hours. Teosinte is known locally as wild maize (*maiz silvestre*), dog's foot maize (*huichuantziri*), and "compacted" maize (*maiz cundaz, tzicundá, atsiri-cundaz, tsir-cundaz*). The latter term is derived from *cundare* (united) because the kernels are packed together instead of being on a cob. Teosinte is not purposely cultivated, and is useful only for fodder, since the kernels are so hard that they cannot be ground in the ordinary fashion but must be "popped" or exploded by heat.

Practically every portion of the maize plant is of use. The kernels, of course, are the chief product. Maize is the leading foodstuff in Quiroga, as it is over most of Mexico, and constitutes more than half of the food consumed—whether measured by volume, equivalent dry weight, or calories. Maize is consumed in dry form (parched and ground, as in *pinole*); as a drink (the parched or boiled ground grain cooked with water and various flavorings, which varies in consistency from milky-colored water, through thin gruels, to watery mushes—known in general as *atoles*); boiled and roasted on the cob; cooked with ashes or lime and ground to a mealy dough which is used for many dishes, ranging from the predominant tortilla and tamale to dumplings and thickening for stews; in the form of hominy which is the base of the famous Michoacán and Guerrero *pozoles* and *menudos;* and in other minor forms. Up into the nineteenth century a kind of native beer or *chicha* was made from maize kernels, but this drink has been completely supplanted by the European-style barley beer, which is brought in from the outside. Neither *miel de caña de maiz* nor *pulque de tlaolli* is made any longer, but the stalks of the sweet-stalked maize are often chewed, as one would a section of sugarcane. The dried corncobs or *olotes* are used as fuel, and also (tied into a circular bundle or disk known as an *olotera*) for shelling or degraining the ears or ripe corn (*mazorca* in Spanish, *centli* in Mexicano, and *xanini* in Tarascan). Husks are used for wrapping foods and cigarettes. The tassels and pollen are still used on occasion in folk medicine. Some of the lesser green leaves (*kani*) are cut before the harvest as emergency fodder for the livestock, and the dried leaves (*hojas secas* or *xaracata*) are used at times as wrapping for foodstuffs and (cut into rectangles with scissors or knife) as cigarette "paper." The entire plant after the ears have been harvested may be left in the field as standing fodder, or more commonly the cut stalks and leaves are dried, stored on racks or in sheds, and fed to livestock as the chief animal fodder (*rastrojo* in Spanish and *arón* in Tarascan). Maize fodder and other grass hays and straws are referred to collectively as *zacate* (Mexicano) and *huitzacua* (Tarascan). Maize stalks and leaves (with the husks attached) are frequently used as a cushion over the floor or planks upon which the bed mat is spread, and in some of the more sophisticated homes mattresses are stuffed with the same material (after the larger canes or stalks have been removed), and pillows are often stuffed with maize husks. The principal commercial elements are the ears and shelled grain and the *rastrojo* fodder, and the leaves and husks separately to a lesser extent. The principal market is in Quiroga town, and only a small amount of grain is exported.

The maize cycle commences with the first plowing or *barbecho*, which begins in January or earlier on the upland fields not planted to wheat, and in May on the lowland fields. If the field is new or is an old abandoned field, the *barbecho* is delayed until the vegetation has been cut (*rosa* or *tala*), dried, and burned (*quema*), and the first plowing on such upland fields will not take place until May. The *barbecho* takes from 1 to 2 weeks with one yoke of oxen on most of the parcels in the Quiroga area, and consists of closely spaced furrows (*rayas* or *surcos*) about a span in depth. In 1945 most of the plowing in the lowlands began between the 14th and 16th of May. Immediately after the initial plowing the entire field is replowed with furrows that cross those of the first plowing at an angle between 30° and 90° according to the amount of slope. On nearly flat fields this *cruza* is at right angles since there is no need to fear the gullying that would result should unseasonal rain find a field with furrows going up and down the slope. Where the soil turns up in large clods the clods or *terrones* are broken up with a mattock. The preliminary plowings are completed with a third plowing which is somewhat deeper than the first two, and which not only improves the tilth but allows a greater number of upturned larvae to die. Normally all of these plowings are completed before the heavy summer rains begin. As soon as one or two good rains have soaked the soil, seeding begins. In 1945 most of the lowland fields were planted between May 28 and June 9. That year there was rain May 18, a sprinkle on the 21st, rain on the 22d, a shower on the 29th, heavy rains on the 30th and 31st of May, and rains on through the first 6 days of June and thereafter sporadically for a total of 17 rainy days in June. That year was considered to be normal in the incidence of rain. The meteorologic relationship of May and June is shown by the 20-year precipitation means from the nearby station of Pátzcuaro, where the total annual mean is 1,065 mm.: January, 16 mm.; February, 14 mm.; March,

9 mm.; April, 5 mm.; May, 36 mm.; June, 174 mm.; July, 251 mm.; August, 239 mm.; September, 188 mm.; October, 82 mm.; November, 30 mm.; and December, 21 mm. On the upland fields sowing of maize commonly takes place in March and on into May.

The seed grain is normally selected through a gradual process of elimination. After the harvest, as the family begins to eat the maize that was not sold, the house-wife each time she needs maize to grind selects the poorer ears. When planting time comes around, if the family is fortunate enough to have a sufficient residue, there is a remnant consisting of the largest ears with the best kernels. These ears are now shelled and the seed is ready for the planting. In the highland fields on slopes there may be plowed only one open furrow or *surco* for planting which parallels the first and third plowings, but wherever possible (both in the uplands and lowlands) the *surcada* is at an angle (commonly 90°) to these plowings. In the more common case of plowing *en cruz* or at an angle, the planter (usually a boy or a woman) follows the plowman and drops three kernels of maize at every intersection—which are normally 75–90 cm. apart. The planting furrows are also 75–90 cm. apart. Should there be interplanting another boy or woman will follow the maize planter and will drop one or two kidney beans by the maize kernels. About two-fifths of the maize fields in the Quiroga area are interplanted with kidney beans. Should pumpkins also be interplanted a single pumpkin seed may be dropped in the same spot with the maize and beans by a third planter, but more commonly pumpkins are planted only with maize. The poorer families who do not own or cannot afford to rent a second yoke of oxen cover the seed by kicking in sufficient earth, but the more common procedure is for a second yoke to follow the last planter about a span to one side of the seed furrow and the *orejera* throws earth which nearly fills the seed furrow. In some fields the last planter or another person places a small handful of manure by each group of seeds. About 2 weeks after the planting, by which time the young maize plants are about 10 or 15 cm. tall, the field is examined for hills that did not sprout. Reseeding (*resiembra*) is done with a digging stick (*coa* or *estaca*). Where there is interplanting the average hill contains two maize and one bean plant.

Immediately after the *resiembra*, and commonly 2 to 3 weeks after the planting, is the first cultivation (*escarda*, *changueo* or *beneficio*). This *primera escarda* is done by plowing along one side of the seed row in such a fashion as to throw earth onto the seed row. One or two boys follow the plowman and "hill" or *amontonar* the plants by uncovering and straightening the smaller plants and heaping up the earth by hand. This first cultivation usually occurs about the middle of June (17th to 25th, in 1945). From 1 to 3 weeks later comes the second *escarda* also known as *la troza*, which is accomplished by plowing an open furrow at right angles (on flat lands and gentle slopes) to the seed rows in such a fashion as to throw dirt to both sides. Boys again follow the plowman and hill the plants. Two to three weeks later there may be a third *escarda*, known as the *tablón*, on the better lands. The *tablón* is an open furrow plowed at right angles to the *troza* and parallel with the seed rows. These various cultivations result in an orderly rectangular pattern of maize hills, which pattern degenerates progressively as one goes from the fields on level land to those on steep slopes. Normally all plow cultivation is concluded by the middle of August. During the cultivation period the excess suckers are removed (*raspa* or *desahije*) and fed to the livestock.

In August and September, normally beginning when the maize is in tassel, it is necessary to weed (*chaponear* or *desenzacatar*) some of the fields. The weeding is done with a small curved machete or sickle (*garabato* and *hoz*), and is done in a leisurely and informal fashion. The fields in the Quiroga area are cursed with many native weeds and also with some 40 plants introduced with seeds from the Old World. Among the more common native weeds are bracken (in the upland fields), some 15 genera of grasses, nettles, *Polygonum* and *Rumex* (in the lowland moist fields), various amaranths and chenopods, *Phytolacca*, *Arenaria*, *Cerastium*, *Argemone* (the Mexican prickly poppy is quite abundant on some fields), *Lepidium*, a number of legumes (especially *Astragalus*, *Crotalaria*, and *Desmodium*), spurges, mallows, *Eryngium*, milkweeds (very common), bindweed and dodder (*Convolvulus*, *Cuscuta*, *Ipomoea*), verbena, mints and sages, solanums, cucurbits (especially *Sicyos*—the *chayotillo* or *acarén*), and some 16 genera of composites (among which *Bidens*, *Cosmos*, *Tithonia*, and *Tagetes* are most

common in the maize fields). Among the more common or annoying of the introduced weeds are canary grass, bermuda grass, nettles, dock, tumbleweed (*Amaranthus spinosus*), wild mustard and wild radish (both very common), bur clover or *carretilla* (*Medicago denticulata*), filaree, horehound, sow thistle, and dandelion. Apparently neither ragweed nor cocklebur has reached the Quiroga area. A number of the weeds are poisonous to stock, such as some of the spurges, solanums, milkweeds, *Astragalus*, *Senecio*, etc. Despite the weedings the average maize field is a tangle of maize, beans, and weeds when harvesting begins. At this time the outstanding weeds are various wild sunflowers (*andán* and *mirasol*), marigolds or *cinco-llagas*, cosmos, *hierba del tabardillo* (*Piqueria trinervia*), the tangled runners of *Sicyos*, several legumes and grasses, and wild radish.

Some harvesting begins at the end of September or during October and the early part of November, when tender roasting ears (*elote*, *helote*, and *jilote* in Mexicano, and *tiriapu* in Tarascan) are available. Also, after the ears have begun to ripen, early fodder is obtained by cutting off the tops of some of the plants (*despuntar*) and some of the leaves. An occasional farmer may turn down the maize plants (*doblar*) so that water will not enter the ears. A few fields in the lowlands may be completely harvested and cleared during November, for food and to prepare for the planting of wheat, but the majority of the harvesting takes place in December—usually between the 14th and 24th of the month. The harvest of ears or *pisca de mazorcas* is commonly done by men, while the beans are harvested by the women. The cutting of the beans (*corta de frijoles*) may take place before or after the *pisca de maiz*, but usually it is afterward. The equipment of the harvesters consists of a husker or *piscador* (*pikuransk-cua* in Tarascan, which seems to be a modification of a Mexicano word), which is a knifelike blade of steel or deerhorn of varying size with one or two holes for a finger band of *ixtle* fiber, a carrying bag (*costal* or *parataracua*) of burlap or *nequén* which is slung over the right or left shoulder, and a cloth or *ayate* (*uangoche* or *guarcoche*) of *nequén* for carrying the ears away from the field. A wicker basket (*chiquihuite* or *xundecosechero*—a mixed Tarascan and Spanish word) is used instead of the *costal* only when there is a large and easy harvest. Usually two or more men harvest a field, each working one row at a time. If the harvest is large, or if the field is at a considerable distance from the farmer's home, the ears are heaped near the margin of the field and after the harvest is completed the ears are packed home in nets, sacks, and cloths by burros. After the maize and bean harvest, if the field is not to be cultivated in the near future, livestock are allowed to pasture on the standing fodder; otherwise the *rastrojo* is cut, piled temporarily in shocks, and then conveyed to houselofts (*tapancos*) or platforms built above the reach of livestock. Instead of a platform quite often a few poles are placed across the branches of a tree and the *rastrojo* is laid there.

The success or quantity of the maize harvest is contingent upon many factors in addition to the fertility of the soil, care in cultivation, and quantity and quality of the seed. Probably the most important prerequisite is that there be the proper amount and distribution of precipitation and temperature. The temperature conditions are usually adequate, since maize can be cultivated in southern Mexico up to about 3,200 meters (10,499 feet), and the highest fields in the Quiroga area are only 2,870 meters on the slopes of Tzirate and 2,820 meters on top of the Cerro Azul. However, much of Sanambo and the highlands extending through the Cerro Azul and Cerro Chino to Tzirate (including much of Icuácato and La Tirímicua, and a part of Caríngaro) lies within the *tierra fría* with heavy frosts in winter and spring, and these lands are commonly planted only once a year with maize, wheat, *habas*, or barley. In the lowlands around Quiroga, although there are frosts every winter (a few in December, mainly in January, and some in February) usually they are light and number only between 10 and 20, and seldom reach the fields close to the lake. Lack of sufficient rain in June, July, and August is the principal cause of poor harvests. In recent years there have been dry series in 1932–33 and 1938–45 (broken by a wet year in 1941), and wetter than average series in 1930–31 and 1934–37. Hail, which occurs most often in connection with the convectional storms from May through September, can blight a crop if there is too heavy a concentration while the plants are young. Although it harmed the maize crop but little, a hail storm on September 27, 1945 (which accumulated to a depth of 20 cm. in places), practically wiped out the bean crop. Smuts are quite common, and some entire fields

become infested. The germinating and sprouting seeds are subject to attack by ants, grubs, and birds; and the growing plant is cut and undermined by rats, mice, rabbits, gophers, and ground squirrels (especially the last two) who also nibble on the young leaves. On rare occasions locusts invade the area. However, there has not been an extremely bad famine year since 1892, although 1894, 1897, 1902, 1907, 1909, 1917, 1920, 1929, 1932, 1933, and 1939 had very poor harvests.

Methods of storage vary extremely. Usually the maize is stored on the cob, and only as much is shelled daily as is needed for domestic food, sale, or feed for horses and mules. Small farmers, and those families which have to purchase all of their maize, often store the ears in a corner of the main room (living room) or in a chest in the same room. More common is storage in the attic or half story (*tapanco*) above the main room; this is especially common in the ranchos. An uncertain but considerable number of families have a formal granary (*granero* or *troje* in Spanish, *cencalli* or *cincalote* in Mexicano, *marita* in Tarascan) which is in the group of structures on the *solar* and may be a separate small building or a room of the house. A few of such granaries are in the form of the Sierra Tarascan *troje,* but more often they approximate the architecture of the house with adobe and stone walls and roof of tile or shake. A few of the slat-sided or crib type of granary (*tziricua* in Tarascan), such as are common in the State of Mexico, were seen, but they are rare and apparently temporary. No square or cylindrical *cincalotes* on legs (such as occur in Guerrero) or vasiform *cuescomates* (of the Morelos type) were noted. However, Gilberti (1559) gives the word *tsirimba* for a *troje* on four posts. When the ears are shelled the most common implement, at least in the ranchos, is the *olotera* or disk of corncobs tied together. Seed merchants and grocers commonly keep the shelled maize in wooden bins which only rarely are lined with metal. There is a very considerable loss of both shelled and unshelled maize from the depredations of beetles, weevils, ants, rodents, etc.

The statistics of production are highly unreliable. We first attempted to find out the area and amount of maize planted. There are about 1,100 hectares of land which are planted to maize and/or wheat. This hectareage is cut down by the amount left fallow each year. Perhaps 775 hectares are planted to maize each year—350 in the region around Quiroga and 425 in the ranchos and on the *ejido.* Some estimates run above 1,000 hectares, but we doubt this figure. We obtained from all the farmers in the ranchos (with the exception of Zirandangacho) the amount of maize that they planted in 1945. This figure was always given to us in liters of seed planted. Since the concensus in the area was that 20 liters of maize were planted to the hectare we divided the sum of 7,006 by 20 to obtain 350 hectares for the five ranchos. The figure for the lowlands was obtained by observation and guesswork. The variables in determining the area are the amount of land left fallow, and the amount of seed used per hectare. Although we obtained figures ranging from 5 to 24 liters of seed per hectare, most of the farmers agreed on a figure around 19 or 20 liters. The next step in determining production was to obtain the rate of yield, since the outright statements of production either were lacking or were not creditable. Here the figures were very variable and ranged from less than twentyfold to more than two hundredfold, with most of the estimates falling between thirtyfold and eightyfold. We estimated the average yield at sixtyfold, although some of the better informed farmers and businessmen insisted that it was only fortyfold. It is probable that the volcanic ash fertilization of the area (from Parícutin) since 1943 has improved production to an extent not yet realized by many of the inhabitants. Again, there is always the possibility that the yield was estimated low because of the habitual distrust of outsiders. Accepting a planting figure of 20 liters per hectare, the average production per hectare would be between 800 liters (8 *fanegas*) and 1,200 liters (12 *fanegas*). These figures can be compared with ranges between 1.5 and 35 *fanegas* per hectare on different types of land in Cuitzeo, Charapan, Cherán, and Tzintzuntzan. Using the figures of 775 hectares of maize land and an average production of 12 *fanegas* per hectare we obtain a total production of 9,300 *fanegas;* and using other figures supplied by citizens of Quiroga we obtain a production varying from 6,200 to 8,800 *fanegas.* The local figures are undoubtedly too small, and we are inclined to believe that our figures should be raised somewhat in terms of an average production of more than 12 *fanegas* per hectare. However, this is all guesswork. Another approach to the matter is through the local annual consumption of maize. In normal years there is

both import and export of maize from the Quiroga area. This is complicated by the fact that Santa Fe, San Jerónimo, and San Andrés market part of their maize crop in Quiroga. We are not certain that our area of study is normally self-sufficient, and it is quite possible that maize from the good lands of the Llano de Tzintzuntzan near Patambicho and the Llano de Santa Fe fill out the deficit, together with some ordinary maize and a little popcorn from other parts of Mexico.

We estimate the annual consumption of maize in Quiroga and its ranchos to be between 12,000 and 13,000 *fanegas* of dry shelled maize. This figure was obtained in the following fashion. We obtained a figure for the average amount of dry maize (in liters) ground daily from every one of the 168 households (representing 998 persons) in the ranchos. This amounted to 1,009 liters a day, or 1.01 liter per person daily. Consumption actually ranged from as little as 0.5 liter to 2.5 liters per adult, with most of the 439 children eating a little less than a liter and the adults eating somewhat more than 1 liter. We did not make such a complete census in Quiroga town, but we obtained estimates from the two maize mills (*molinos de nixtamal*) where 214 to 307 of the 629 households had their *nixtamal* ground daily into *masa*. The Torres mill figured 5.6 liters of equivalent dry maize per household (the households in Quiroga average five persons each) which amounted to 1.1 liter per person—a figure very close to that which we obtained from the ranchos. The Torres mill, however, is situated where the majority of its patrons are not eaters of wheat bread. The Fuentes mill figures worked out to 0.74 liter per person, but many of its patrons ate wheat bread at one or more meals daily. The 1940 census showed that 84 percent of the people in the town of Quiroga ate no wheat bread. Probably by 1945–46 this figure had decreased to about 80 percent, which estimate is based on examination of the current civil register records where this item is now included in the various forms. In addition we sampled 50 households in the peripheral Calvario district (where nearly all grinding is by metate) which yielded an average of 0.80 liter per person; 20 households in the central part of town (where grinding was evenly divided between mill and metate), which had an average of 0.753 liter per person; and 14 households in the central district (which had all their maize ground at the mill), where the average consumption was but 0.378 liter per capita. In the light of these various returns we assigned 50 percent of the town's population to the rate of 0.801 liter (this group is composed of farmers and day laborers who eat no wheat bread but who cannot afford to eat as much maize as do the *rancheros*); 30 percent were assigned to the rate of 0.753 liter (this group is mainly composed of wealthier farmers, artisans, and small merchants who eat no wheat bread but who can afford a wider variety of food than the previous group); and 20 percent were assigned to the rate of 0.378 liter (this group comprises all of the wheat bread eaters who tend to be the wealthiest artisans, merchants, governmental employees, and the like). It must be kept in mind that even the wealthiest of Mexicans in the rural regions eat tortillas at one or more meals, even though they may be listed as eaters of wheat bread. The above figures provide the totals of consumption as follows: ranchos, 3,683 *fanegas* a year, Quiroga "poor," 4,614 *fanegas*, Quiroga "intermediate," 2,602 *fanegas*, and Quiroga "relatively rich," 876 *fanegas*, for a grand total of 11,775 *fanegas* of dried maize ground into *masa* yearly. This *masa* or meal dough (used in tortillas, tamales, *atoles*, stews, etc.) constitutes the chief form of maize consumption. The other forms in which maize is consumed (roasted, boiled, *pozole*, *pinole*, etc.) amount to but a very small part of the total. *Pozole* and *pinole* are *fiesta* dishes usually purchased in the plazas, and boiled or roasted ears constitute the chief use within this group. We would guess that maize consumed in these forms does not amount to more than 5 percent (in equivalent dry kernels) of the maize converted to *masa*. This estimate would give a total annual maize consumption of 12,364 *fanegas*. It is extremely doubtful that the Quiroga consumption would exceed 13,000 *fanegas*.

Considering the variables in the estimates of acreage and production, it would be a waste of time to go deeply into the economics of maize raising. We sampled a number of farmers and their parcels as to costs and incomes; but it was impossible to rely on their information, our own observations were not complete enough, and the samples did not cover all the variations in rotation systems, quality of soils, ability of the farmers, sizes of parcels, types of landholding or land use

(absentee landlord with mayordomo, various types of *medieros, ejidatario,* etc.), sizes of farming families (i. e., labor resources), and other important factors. It would be misleading to present conclusions for all of the Quiroga area on the basis of our samplings which incompletely covered only some 130 farmers. However, for whatever it is worth, we will summarize the results of our observations and interviews with farmers. There were approximately 350 farmers (owners, renters, and *ejidatarios*) who planted maize in 1945. The amount planted by each farmer varied from less than 0.2 of a hectare to more than 25 hectares. Both the median and the modal acreage planted to maize was 2.5 hectares, i. e., the typical or normal farmer cultivated 2.5 hectares of maize in 1945. What the average was we are not certain—probably somewhere between 2.2 and 3.0 hectares, and most probably closer to the first figure. The modal, median, and typical maize farmer spent about 50 days of labor per hectare (everything from *barbecho* to harvesting), which represents 125 man-days for the typical farm. Probably 70 to 80 of these man-days were provided by the farmer himself and members of his family, and the remaining 40 to 50 man-days were provided by hired labor. The average cost of farm labor per day in 1945 was $2. Seed maize, if retained by the farmer from his previous harvest, cost him merely its nominal value. During the year there is considerable fluctuation in maize prices (highest just before the harvest and lowest during and just after the harvest), but an average of $21 wholesale (from farmer to merchant) and $23 retail (from merchant to consumer) a *fanega* obtained during most of 1945. Prices went up 2 centavos a liter in the winter of 1945–46. At 20 liters of seed per hectare the seed would be worth about $4.20 per hectare or $10.50 for the 2.5 hectare parcel. The amortized cost or value of equipment used in a year (plow, yoke, harness, machete, etc.) probably would not amount to more than $9, which includes the depreciation due to use on other crops besides maize. About 80 percent of the proprietary farmers own at least one yoke of oxen, nearly 30 percent own two or more yokes, while practically all of the sharecroppers must rent work animals. Work oxen commonly rent at $4 a yoke per day plus their food. The typical farm owner probably rents oxen for the equivalent of 25 yoke-days, which would amount to $100 ox rental for the maize season. The typical farm owner also owns one or two burros and/or horses, and has no need to rent these animals. The typical cultivated parcel probably is listed on the tax rolls as *temporal de segunda,* valued at $80 a hectare, and the total annual taxes will amount to $3.38 for the 2.5 hectare parcel. There is little point in considering capital investment (the real sales valuation of the land) and return or interest on the investment since (*a*) it is exceedingly difficult to obtain the sales valuation, and (*b*) the farmer does not think in such terms. Actually he is inclined to think of his returns on an annual basis and in terms of how much maize he has left for himself after paying maize (or cash equivalent) for hired labor, rental of animals and equipment, and whatever else called for immediate expenditures. His time, and that of members of the family, and the value of his land, animals, and equipment on hand, do not enter into his accounting. Roughly, expenditures and returns per typical hectare and parcel of 2.5 hectares might be as shown in table 27.

TABLE 27.—*Expenditures and returns per typical areas*

Area	Hired labor	Home labor	Seed	Depreciation of equipment	Ox rental	Taxes
1 hectare	$40	$60	$4.20	$3.60	$40	$1.35
2.5 hectares	100	150	10.50	9.00	100	3.38

Area	Estimated costs	Production	Value of crop	Cash net [1]	Total net [2]
		Fanegas			
1 hectare	$149.15	12	$252	$170.65	$102.85
2.5 hectares	372.88	30	630	426.62	257.12

[1] The cash value of the maize crop minus expenses of hired labor, rented animals, and taxes.

[2] The cash value of the maize crop minus all estimated costs. In addition the farmer will profit on beans and pumpkins interplanted with the maize, *elotes* taken out before the main harvest, and the *rastrojo* fed to his own animals or sold.

WHEAT

Common wheat (*Triticum vulgare* Vill. or *Triticum aestivum* L.) is the second field crop by acreage and is the leading cash crop since the majority of the farmers do not eat wheat bread but sell their entire harvest to the local flour mill. Mediterranean or turgid type wheat was being cultivated in the Pátzcuaro Basin before 1534, and has continued to be highly important throughout most of northern Michoacán to the present day. During the entire colonial period Michoacán

was considered to be the most fertile wheat-producing area in Mexico. One of the two oldest wheat mills in Michoacán was located in the Pátzcuaro Basin and this mill (on the site of the present mill of San Rafael or Chapultepec about 7 or 8 miles southeast of Quiroga) was visited by Ponce (1872) in 1586, who said that it ground all the wheat of the lands around the lake. He went on to say (vol. 57, pp. 537–538) that there was much wheat and of a very good quality, especially one strain known as *siete espigas* (seven ears or spikes). We were unable to find this term employed at the present time. All the wheat that we saw was of the semihard turgid floury type grain. Locally the forms are known by differences in color (red and white), bearded and beardless, and according to planting season (summer, fall, and winter). All combinations among these three classificatory groups are known, but the principal wheat is a red (*colorado*) bearded (*barbón*) wheat planted in the fall (*aventurero*). White wheat (*trigo blanco*) constitutes a very minor fraction of the wheat produced, and little of it reaches the mill. Beardless wheat (*trigo pelón*) is not favored because it is more subject to attack by birds, and a strong wind will cause it to shatter more than the bearded wheat. Only a little wheat is planted in the winter (*trigo de la rosa*), in November and December, on the richer and moister soils of the lowlands and the *joyas* of the highlands after the fields have been cleared of maize and beans. This later wheat is harvested in May and June, about 40 days after the main wheat harvest. An even smaller amount of wheat is planted during the summer rainy season (*trigo de las aguas*), and this is harvested in December and January. We heard of a bearded *palmillo* wheat, but were not able to fully identify it.

Wheat suffers by comparison with maize as to uses made of it in the area. Although about 12,000 44-kg. (about 100 pounds) sacks of flour are milled in Quiroga each year, there is relatively little consumption of wheat in any form. Only about 160 or 170 families (20 percent of the population) commonly eat wheat bread in any form—French rolls, small sweetened breads (*pan dulce*), cookies, biscuits, crackers, etc. Furthermore, all who use wheat bread also use maize. There is occasional use of the meal of white wheat, ground on a metate, in thick tortillas (*gordas*) and *atoles*. Most of the straw is used to feed livestock, but a little is used in the making of fire fans and comparable items.

Wheat is raised principally on the slopes around Quiroga and in the ranchos, and most of it follows a period of fallowing. The most common cultivation sequence commences with an initial plowing (often followed by a *cruza*) between the middle of August and the middle of September. Then, in September and October, the field is sown broadcast by strips, the wheat seed is plowed under, and a small log with branches (commonly oak or hawthorn) is dragged over the field to break the clods and harrow in the seeds. This manner of seeding is quite inefficient and wasteful. The wheat sprouts in about 2 weeks. Nothing more is done by the farmer until the reaping period, which normally commences in the first week of April. Most of the wheat is reaped and threshed by the end of April. Two or three men commonly will cut a wheat field, working at the rate of 7 to 12 man-days per hectare, depending on the density of the wheat growth. Each man is equipped with a short-handled crescent sickle or *hoz* (usually with sawteeth, which are added to the purchased *hoz*), and with this he moves slowly down a swathe (*melga*, three to four paces wide and the length of the field) in back-breaking bent-over position, cutting the wheat plants handful by handful. Several handfuls of wheat are piled in a heap or *navilla* and later about every six *navillas* will be gathered and tied into sheaves or *manojos*. The *manojo* is tied with two knotted lengths of wheat. Reapers are paid by the *melgar* and may earn as much as $2.25 a day. Immediately after the reaping the sheaves are brought to a threshing floor and the wheat is threshed, sacked, and packed by animals to the mill or a granary. If the field is customarily planted to wheat there will normally be a permanent slab-paved threshing floor (*era*) at some centrally located unplowed spot or at the margin of the field. Otherwise a temporary *era* will be constructed by shoveling off the loose earth from a polygonal area about 8 meters in diameter, tamping the earthen floor, placing a guard or edging of stone slabs, erecting the necessary corner posts, and stringing one or two ropes around to keep the threshing animals from straying. Most of the *eras* we saw were nine-sided, and could hold from 4 to 12 animals (usually horses and mules—but there are very few mules in the Quiroga area). The average threshing unit con-

sists of two men, four animals, one pitchfork, and one spade. The animals, if rented, cost $1.50 per day. A unit of four animals or *bestias* can stomp out three threshings (*tareas*) of 40 *manojos* each in one day. Each *tarea* yields an average of 1.0 to 1.3 *cargas* (a *carga* is 161 kg. or 210 liters) of grain. On some small holdings the wheat is threshed with flails, but that method is quite rare in the Quiroga area.

The statistics on wheat production are even more elusive than those for maize. Farmers planted between 8 and 50 liters per hectare, with the mean running about 26 liters. Yields ranged from 2- to 4-fold on poor land, through 8- to 12-fold on intermediate land, to 30- to 44-fold on the best lands. The average would fall between 10-fold and 22-fold, but we are unable to be more precise. State statistics claim that in 1883 (when the soil presumably was somewhat richer) the yield was 12- to 15-fold, and the current consensus is that the average yield is only 5-fold. Our slightly informed guess is that the average yield was about 12-fold in 1945. On the basis of 26 liters of seed per hectare this would amount to a production of 312 liters, or a little less than 1.5 *cargas* a hectare. The slopes were said to produce 1 *carga* and the bottom lands 2 *cargas* a hectare. Probably such low yields represent only a poorer than average year. In a normal year the average production probably would run between 2.75 and 3.25 *cargas* a hectare. The Mexican average is 4.8 *cargas* a hectare. At least 100 farmers in the ranchos plant wheat, for a total of between 250 and 300 hectares. Perhaps another 50 farmers raise wheat on some 200 hectares in the lowlands—including irrigated fields near Zirandangacho and *solares* in town. The total Quiroga production in a normal year should amount to about 1,350 *cargas* (216,000 kg.), with annual fluctuations between 750 and 2,000 *cargas*. In 1944 a *carga* of wheat sold for $48, but before the end of 1945 a *carga* was selling for $56.50 up to $57.75 at the mill. Where the farmer formerly had purchased seed wheat for about $50 a *carga*, it advanced to $58.80. Apparently Quiroga and its ranchos normally supply only a minor part of the 9,248 *cargas* milled annually in Quiroga, and the remainder comes from the rest of the municipality, from Tzintzuntzan, other parts of Mexico, and even from the United States. The net income of the wheat farmer per hectare (computed in the same fashion as for maize, but not charging for taxes and equipment depreciation which were wholly deducted previously) probably amounted to about $50 on the average in 1945, and about two to three times that amount in normal and good years.

HABAS OR BROADBEANS

Habas, known in English as horsebeans, broadbeans, and Windsor beans, were introduced by the Spaniards in the first few years after the Conquest. These large beans or vetches (*Vicia faba* L.) are native to the Mediterranean region, and are the classic beans of occidental culture which dominated before the introduction of the New World kidney bean. Because *habas* nitrify the soil, are not so demanding of the soil as maize and wheat, and because they can be grown under cool to cold conditions in the highest cultivated fields, they have become an important field crop in the highland areas of Michoacán. In the Quiroga region most of the *habas* are raised in the highland ranchos, especially in Icuácato and Sanambo. Several varieties are cultivated, which differ principally in the color of the bean, size of the bean, and length of the fruit or pod. The most common form grows to a height of about a meter, is quite leafy and produces a good hay, and has a fruit from 10 to 15 cm. in length and a large thick angled and compressed seed normally brown in color. The Tarascan name for this bean is *castillapu cocotsi* which means Spanish scarlet runner bean because of its nearest native counterpart in size and its introduction. The *haba* is not much consumed locally excepting on certain feast days from Christmas to Easter and during Lent. One of the more common dishes is boiled cold *habas* eaten individually with a dusting of sweetened *pinole*. Apparently the bulk of the *habas* is shipped out, and the hay is fed to livestock—although *haba* hay is extremely susceptible to attack by "worms." For about 15 years until recently the acreage planted to *habas* decreased steadily and was less than that of kidney beans, but a rejuvenation of the upland soils with volcanic ash from Parícutin has caused a considerable expansion, beginning in 1943. At present *habas* are planted on from 250 to 400 hectares each year, which places them ahead of kidney beans. In 1945 there were about 160 hectares of *habas*

harvested in the ranchos and perhaps 90 more on the slopes or *laderas* near Quiroga.

Although there is some winter planting for a spring harvest, most of the *habas* are planted in May and June with the first rains and are harvested from November into January. Preparation of the field is much the same as for maize. The seeds are planted in a furrow, one or two at a time spaced either every 20 cm. or 40 cm. according to the nature of the soil. The amount planted to the hectare varies from about 48 to 100 liters. Cultivation ranges from a slight weeding to several *escardas* done by hand. Harvesting resembles that of wheat. Men cut the plants near the ground, tie them into large bundles or shocks known as *tercios*, and pack them on their backs to the threshing floor. The typical *era* is a shoveled and swept hard dirt floor usually 6-sided and about 4 paces on the side. Six forked posts support poles which are tied in place with withes, although rope is sometimes used for the corral. Such an *era* can hold up to 12 horses, but the most common number is 8 or 9 tended by 1 man. A unit of three men (two bringing in the *tercios*), nine *bestias*, a pitchfork, a shovel, and a brush can thresh, winnow, and sack about 14 to 15 *cargas* (200 liters to the *carga*) or 20 sacks a day. After the beans have been stomped out, the horses and hay are removed from the floor, fragments of pods and chaff are brushed away, and the beans are winnowed by shoveling into the air. Usually there is ample wind in the highlands at this season. Yields run from 20- to 50-fold, the average being close to 50-fold at present, while a few years ago it was less than 20-fold. However, there is a very high loss from shattering in the field and poor threshing. After the threshing, the people of the rancho glean, after which there is a celebration or *fiesta* at night in the field. At present a hectare will produce from 12 to 25 *cargas* of *habas*, and the average probably is around 15. At harvest time *habas* sold in Quiroga in 1945 for $15 a *fanega* or $30 a *carga*. Where formerly the *haba* farmer might take a loss, he now may net $100 to $300 a hectare. The farmers, however, deny this and claim but a minimal profit.

KIDNEY BEANS

The traditional Mexican accompaniment of maize is *frijoles*, which term is used only for beans of the genus *Phaseolus* and usually for the kidney bean or *Phaseolus vulgaris* L. The kidney bean, in its multitude of little-studied forms, is a native of Latin America and probably of the northern portion in Mexico and Central America. In addition to the kidney bean the prehistoric peoples of Mexico cultivated the scarlet-runner or multiflora bean (*Phaseolus coccineus* L. or *Ph. multiflorus* Willd.), the tepary bean (*P. acutifolius* Gray), the small lima or sieva (*P. lunatus* L.), and the *frijolillo* bean (*Canavalia villosa* Benth.). In the Tarascan region of Michoacán at the time of the Conquest there is mention only of red and black beans (Relación de Michoacán) which would indicate that the two predominant types that attracted the attention of the Spaniards were the kidney bean (red to light buff in color) and the scarlet-runner bean (nearly black with red markings). However, there are black and speckled forms of the kidney bean, brown and red and speckled variants of the small lima bean, and brown and black types of the tepary bean, and the bean of the *Canavalia* may be red, brown, or white. Apparently we can be certain only that white forms of the various species were absent or rare. Practically all of the native beans raised in Quiroga were kidney beans, although we saw some cultivated scarlet-runner beans (*cococheˌ cocotziˌ ayacotliˌ ayecocimatl*, and *cimatl*). There are at least two well-recognized forms of the scarlet-runner bean, which are more commonly raised in the Sierra Tarascan pueblos and in the States of México and Guerrero than in the Pátzcuaro Basin, although we collected what appeared to be a wild *Phaseolus multiflorus* in the Quiroga area. There is no present cultivation of the tepary and *frijolillo* beans, although both are wild in the area and sometimes are gathered. Of the minor species cultivated perhaps there were more small white limas than the large purplish-black scarlet-runner. The various species other than the kidney bean were more commonly planted in the *solares* than in the fields. The kidney bean is represented in Quiroga by some six well-marked types each of which contains several subtypes according to size, color, and markings. The terminology for the many varieties represented is quite variable and confusing, and we obtained such contradictory names in different parts of the area and from different people within the same rancho that we are certain only of the names of the principal forms. Probably more than 90 percent of the

kidney beans planted in the fields fall within the type or group known widely over Mexico as *frijol bayo*, which ranges from gray and yellow through buff (yellowish-orange) to light-brown and pinkish in color. The most common color is a clear yellowish-orange, and speckling or spotting never occurs in any of the forms. There are two common sizes—a larger or *gordo* and a smaller or *delgado*. Minor types, varying in form, size, and coloration, include black, white, red and spotted beans which go under such names as *prieto, negro, paloma, palacio, colorado, criollo, rosa de castilla* (a former place name southeast of Cuenembo), and *pinto*. The terms *judía* and *alubia* are synonyms for *frijol*, but sometimes are affixed to particular forms.

Beans are the second most important element in the diet of all but the very poorest who cannot afford *frijoles* commonly and must content themselves with tortillas, *atoles*, and chiles. Kidney beans are boiled or stewed, or cooked in lard; and boiled beans are sometimes mashed or ground to a paste which is used in filling tamales. At times the bean paste will be sweetened. Also, there is considerable consumption of green or snapbeans (*ejote*, from *etl* the general Mexicano name for bean). The bean straw or hay serves as fodder.

All of the field beans are planted with the maize, commonly one or two beans in each hill. The entire cultivation process for the maize naturally includes the beans up to the time of harvest. Beans may be harvested either just before or just after the maize harvest, and harvesting is almost invariably done by women and children. After the *ejotes* have been gathered off the vine, the bean plant is cut off near the base and the plants are stacked in some part of the field. Until the nineteenth century obsidian or *zinapu* knives were used for cutting, but now steel knives are used. The bean plants are piled on a mat and flailed until the beans have been disengaged from the pods. Then the beans are winnowed from the chaff and carried home in baskets, *ayates*, and sacks. Some of the rancho farmers thresh their beans in the same fashion as they do *habas*. Our account of harvesting procedure is based on hearsay. Most of the 1945 crop of beans was lost because of a severe hailstorm which followed a series of diseases and insects which had attacked the roots and leaves.

Commonly 200 to 300 hectares of maize are interplanted with beans each year, which acreage is about evenly divided between the ranchos and the area around Quiroga. Only about half of the farmers (55 percent) plant any field beans, and usually not all of the maize acreage of these farmers is interplanted with beans. The farmers plant from 5 to 15 liters a hectare, with an average of perhaps 8 liters. The yield varies greatly, ranging from 5-fold to nearly 50-fold, with a mean of possibly 18-fold. The returns per hectare vary from as little as 25 liters to more than 700 liters, with the average falling somewhere between 150 and 250 liters. It is impossible to determine what the average total production of kidney beans is in the Quiroga area other than that it is between 30,000 and 75,000 liters and probably not more than 45,000. The income from beans cultivated with maize is nearly net other than the cost of the seed and the labor which is usually provided by members of the family. In 1945 beans were valued at about 30 centavos a liter.

BARLEY

Barley (*Hordeum vulgare* L.) is the fifth field crop by area planted, but it is a very minor crop commonly planted only in Sanambo and occasionally in the other ranchos of the *tierra fría*. In 1945, 10 Sanambo farmers planted 505 liters of barley on perhaps 20 hectares of land. It is claimed that the normal planting is 3,000 to 4,000 liters. We obtained no information as to cultivation and harvesting other than that it was very similar to wheat. A normal crop may run about 500 kg. per hectare.

OTHER FIELD CROPS

Some cucurbits are interplanted with maize but most of their production is on *solares* and is discussed later. Alfalfa or *lucerne* (*Medicago sativa* L.) is planted on a few fields in town and in Zirandangacho. Nearly all of it is under irrigation, but there are not more than 4 hectares in total. Before the last revolution there was at least 10 times this acreage planted, principally by two men in the Quiroga lowlands. In the nineteenth century the Quiroga area was well known for its production of lentils or *lenteja* (*Ervum lens* L.) which the Tarascans call Spanish beans (*castillapu thatsini*), but there is no field cultivation of it now and it is rare in the *solares*. Apparently there never was cultivation of oats and rye in the area. Flax or *lino* (*Linum usitatissi-*

mum L.) and hemp or *cáñamo* (*Cannabis sativa* L.), have not been important since colonial times, and at the moment are not cultivated in the area. Chickpeas or *garbanzos* (*Cicer arietinum* L.), grass pea or *arvejón* (*Lathyrus sativus* L.), and field peas or *chícharos* (*Pisum sativum* L. var. *arvense* Poir.) were cultivated from early colonial times into the late nineteenth century, but they occur now only sporadically in *solares*. The Mexicans have never taken to the flavor of these Old World legumes. A few of the more advanced and experimentally inclined farmers have planted some sorghum—known as *sorgo* and *maiz de castilla*—(*Holcus sorghum* L.), but only a few plants of the durra variety were seen.

GARDEN CROPS

Garden crops comprise those plants, chiefly vegetables, which are raised on the outskirts of town (as above the springs of Tepóricua), in vacant *manzanas* within town (chiefly in *cuartel* I), and on the house plots or *solares* in town and in the ranchos. Practically all are irrigated, either by ditches from springs and hydrants, or by hand with *latas* and *ollas*. We were able to determine something of the incidence of the various plants, but could form no estimates of production excepting that the Quiroga area produces no vegetable in quantity large enough to supply local demands excepting pumpkins. The deficit in most vegetables is supplied by Santa Fe, Tzintzuntzan, Chapultepec, San Jerónimo, San Andrés, and Chucándiro. There are only four commercial truck gardens in Quiroga, and these do not total more than 2 hectares. The principal garden vegetables are beets, cabbages, carrots, chayotes, chile peppers, coriander, lettuce, onions, green peas, potatoes, pumpkins, radishes, tomatoes and husk-tomatoes, and turnips. Of these vegetables the majority of the native chayotes, chile peppers, and pumpkins are raised in the *solares*.

In terms of acreage and bulk of production the leading vegetable is the pumpkin, but this term includes several species of the genus *Cucurbita*. These cucurbits are used as human food (stewed, candied, baked, etc.), the seeds of some are roasted and eaten like sunflower seeds or peanuts (formerly an oil was made from the *pepitas*), the vines and fruits are fed to livestock, and some are grown as ornamentals. According to sixteenth-century sources the Tarascans recognized at least eight kinds of "pumpkins" which probably represented four species of *Cucurbita*, a *Lagenaria*, a *Crescentia* (not a cucurbit but a bignonia, the calabash tree or *cirián*), and one or two wild *Asclepias* (milkweeds) whose fruits are collected wild and eaten like young pumpkins. The early Spaniards termed everything that looked like a gourd a *calabaza*, although they sometimes termed the edible gourds *melones*. The identity of the various cultivated *Cucurbita* is more confused even than is true for New World beans, and scores of Spanish, Mexicano, Tarascan, and other names are current for the cultivated *Cucurbita* in southern Mexico. Apparently the general term for pumpkin is *calabaza* in Spanish, *ayotli* in Mexicano, and *purú* or *puruan* in Tarascan. The truly indigenous pumpkin is the field pumpkin (pie pumpkin, summer squash) which is *Cucurbita pepo* L; and which is known locally as *calabaza*, *calabaza común*, *calabaza corriente*, *calabaza india*, *calabaza amarilla*, *coztic-ayotli*, and *purú*. This is the pumpkin most commonly interplanted with maize, and is also the leading pumpkin in the *solares*. It is this pumpkin which produces nearly all of the buds, flowers, and young fruit (*calabacitas*) which are so esteemed locally. It is gathered from August to December. Next is the fig-leafed pumpkin (*Cucurbita ficifolia* Bouché), also a native of Mexico but apparently introduced to the Tarascans through the Mexicans since the Tarascan name *tikatzi* sounds very much like an adaptation from the Mexicano *tzilac-ayotli* (smooth-skinned pumpkin) which modern Mexicans have corrupted into *chilacayote*. This may be the *calabaza dura* (hard pumpkin) of the literature which we have not identified, since it has a hard gourdlike rind. Many people call it *cidracayote* and confuse it with the "citron" or white-fleshed watermelon (*Citrullus vulgaris* Schrad.). Neither the white nor the pink-fleshed watermelon is cultivated in the Quiroga area although it is known and consumed under the Spanish name *sandía* and the Tarascan name *itzi-purú* which means literally "water-pumpkin." The *chilacayote* usually is planted in May and June and is harvested from September to January. Commonly it will be picked in September and October and placed on the gently sloping roofs to mature. The fruit is normally oval with a green rind striped with white, and contains a white flesh and seeds which vary from white to black. The

chilacayote macho has black seeds and a very fibrous flesh which is prized for cooking with brown sugar to produce a *dulce* or candied dessert. A less fibrous and sweeter form, *chilacayote calabazo*, with black and with white seeds is cooked like ripe pumpkin. Another native pumpkin is the *puruan-zecua*(?), *talayote*, or *calabaza tamalayote*, which we know as the musky pumpkin, cushaw, and winter crookneck (*Cucurbita moschata* Duch.). This pumpkin is raised only in the *solares* and is not very common. A prized but not commonly raised pumpkin (really a squash) is the South American *Cucurbita maxima* Duch., which was introduced by the Spaniards and is known as *calabaza de castilla* and *calabaza turbante* and improperly as *ayotli* and *tamalayota*. This is the species to which belong our autumn and winter squashes, Hubbards, Mammoth Chileans, and Turbans. Various strains of this species are cultivated, and often they are planted in January and February and harvested in May and June. Probably the native Mexican *Cucurbita mixta* Pang. is present but we were not able to identify it. Nor were we able to identify the pumpkins known to the Tarascans as *tzopome* and *itzuz*. The related calabash gourd (*Lagenaria vulgaris* Ser., *Lagenaria siceraria* (Mol.) Standl., or *Lagenaria leucantha* Rusby) was known to the prehistoric Tarascans, and water bottles (*guajes* or *bules*) of this gourd are used in Quiroga, but all are imported. Tarascan names for the bottle gourd include *ihuan-itzuz*, *xuren*, and *timapo*.

The next most important plant in the *solares* is the chayote (*Sechium edule* Swartz.) which is also a native Mexican cucurbit known to the Tarascans as *apupu* and *apupio*. It is a perennial which produces both fruits and tuberous roots for 6 to 8 years. Although it can be planted at any time of the year, usually it is planted between October and March. A hole is dug in the yard and an entire fruit is planted. Then a protective cage and trellis is constructed of poles which keeps animals from damaging the growing plant and gives support to the multitudinous ramifications of the vine. Some fruit is gathered about August of the first year of planting, but the crop is not important until the second year when harvesting goes on commonly from July to December. The fruits are somewhat pear-shaped, 10 to 20 cm. in length, with a greenish wrinkled and furrowed skin, and contain one large flat seed. In the second year can begin the collection of some of the minor tuberous roots (*chinchayote*, *guarás*) in December and January, but the large roots are not gathered until the plant has seen its best producing days and is cut down. Chayotes are not so common in Quiroga as in many other parts of Mexico and we counted only 230 plants in 101 *solares*. Both the chayote and the *raiz de chayote* are cooked and eaten as vegetables, but they are always considered as something of a delicacy. The chief source of outside supply is Santa Fe, whose women sell the cooked fruit and root in the Quiroga *plaza*.

The third most important vegetable of the *solares* is the chile pepper in several of its many varieties. *Chile* or *ají* (*chilli* in Mexicano and *cahuás* in Tarascan) can be lumped in one species *Capsicum frutescens* L., or divided into two or three species each with several subspecies. All of the chiles cultivated in Quiroga are of the annual type (*C. annuum*), and belong to the long (*C. longum*) and bell (*C. cordiforme* or *C. grossum*) subtypes. The chiles are green when immature, and are red or yellow when ripe. The most common forms raised are known by the names *perón* (also *amarillo* and *chilcoztli*), *jalapeño* or *mango*, and *pasilla* or *guajillo*. Also such names as *ancho*, *chipotle*, *poblano*, *mulato*, *verde*, and *seco* are encountered, which merely represent shape, size, maturity, color, and preparation of the above types. The ancient Mexicans recognized seven distinct species of which five seem to be present in Quiroga. Chiles are planted at various seasons of the year, most commonly in February, June, September, and December, and usually take 4 months to mature, after which the fruit can be harvested for about 5 months. The main chile harvest is through the months from June to December. However, probably the bulk of the chile consumed in Quiroga is imported from outside of the Pátzcuaro Basin.

The other important vegetable crops will be discussed briefly in alphabetic order:

Beets (*Beta vulgaris* L.), known locally as *acelga* and *betabel*. Quite minor. Roots and leaves used.

Cabbages (*Brassica oleracea* L.), *col*, *repollo*, and *xacua*. The general Tarascan term for an edible leafy herb is *xacua*. Common, in the form of kales, and white cabbages. Used in soups and stews.

Carrots (*Daucus carota* var. *sativa* DC.), *zanahoria*. Minor.

Coriander (*Coriandrum sativum* L.), *culantro* and *cilandro*. A common flavoring for soups and stews.

Lettuce (*Lactuca sativa* L.), *lechuga.* Fairly common. More of the romaine than the head type.

Onions (*Allium cepa* L.), *cebolla* in Spanish, *xonacatl* in Mexicano, and *tsurups* in Tarascan. The Indians transferred their names for native wild onions. Common. Planted January-April, gathered June-August.

Peas (*Pisum sativum* L.), *chícharo, guisante.* Fairly common. Also field cultivated.

Potatoes (*Solanum tuberosum* L.), *papa.* Introduced by the Spaniards from South America so that the species cultivated in Quiroga probably is *Solanum andigenum* Juz. & Buk. var. *mexicanum* Buk., which reached Mexico from Peru or Colombia by 1570. Unimportant; used as a flavoring instead of a vegetable. Planted March-April, harvested July-August. There are several wild species of potatoes in the region.

Radishes (*Raphanus sativus* L.), *rábano.* Minor. The introduced wild radish is a common weed.

Tomatoes (*Lycopersicon esculentum* Mill.), *jitomate, toma cuaraki, xucupara.* Fairly common. Old unimproved strains. Used as flavoring, in soups and sauces.

Husk tomatoes (*Physalis* spp.), *tomate, toma, coztomate, tomatillo, jaltomate, miltomate.* Three or more species are cultivated. Common. The true Mexican tomato, used in the same way as the *jitomate* or navel tomato.

Turnip (*Brassica rapa* L.), *nabo.* Minor.

Present in a few gardens and *solares* but rare are such European vegetables as garlic (*ajo*), eggplant (*berengena*), mustard (*mostaza*), cucumber (*pepino*), leek (*puerro*), and purslane (*verdolaga*). No melons, watermelons, peanuts, sweetpotatoes, or *jícamas* are cultivated locally. It is hard to tell if the various *quelites* and *bledos* (*Amaranthus* spp.; and *Chenopodium* spp.), as well as *chias* (*Salvia* spp.), which can be seen growing in some of the *solares* are cultivated or adventitious. At any rate, they were cultivated in Quiroga well into the nineteenth century, and they are still collected for greens, grains, and oil. Amaranth or *bledo* is still raised in Santa Fe to provide grain for some of the special tamales. It is planted about April and is harvested in October. The small black and also white seeds of two or more species of *chia* are ground into meal for a drink (often an *atole*, mixed with maize meal), fed to caged birds, and oil is expressed for use in finishing some of the *bateas*. Castor-bean (*ricino, higuerilla, palma-christi*) and prickly poppy (*chicalote*) are no longer cultivated or gathered for commercial purposes, but their oil was sold out of Quiroga as late as the end of the nineteenth century. Also, a number of the field crops are planted in *solares*, such as colored maize (*maiz de colores*) which may be blue, red, or pinto; kidney and other beans; and some wheat and alfalfa.

A large number of ornamental, flavoring, and medicinal plants are raised in the inner patio or part of the *solar* adjacent to the house. Even the homes of the very poorest, or those farthest removed from a supply of water, have a few plants—either planted in the ground or in a flowerpot that may vary from a formal terra-cotta pot or *maceta* to a tin can filled with earth. A full report on the Quiroga patio and its plants will be published at another time, and here we will present only a brief outline. Cultivated flavoring plants are chiefly of Old World origin, since the native plants are commonly gathered from the wild flora. The most important flavorings (in addition to chile, coriander, onions and garlic, tomatoes and husk tomatoes, mustard and leek already mentioned) are:

Anise (*Pimpinella anisum* L.), *anís.* Minor.

Cumin (*Cuminum cyminum* L.), *comino.* Minor.

Dill (*Anethum graveolens* L.), *eneldo.* Minor.

Epazote (*Chenopodium ambrosioides* L.). Fairly common; used to flavor beans.

Fennel (*Foeniculum vulgare* Hill.), *hinojo.* Minor.

Laurel de comer (*Litsea* spp.). Fairly common cultivated shrubs whose leaves are used for flavoring food. There are other wild and cultivated species of the genera *Sassafridium, Persea, Ocotea,* and *Nectandra,* (commonly known as some kind of *laurel, canelo,* or *aguacatillo*), whose leaves are used in the same fashion.

Majoram (*Origanum vulgare* L.), *orégano.* Fairly common. Much used, but most of it is brought in.

Sweet marjoram (*Majorana hortensis* Moench), *mejorana.* Common.

Parsley (*Petroselinum hortense* Hoffm.), *perejil.* Common.

Peppermint (*Mentha piperita* L.), *yerbabuena, menta.* Most widely cultivated.

An occasional garden may have basil (*albahaca*), caraway (*alcaravea*), celery (*apio*), sage (*salvia*), and thyme (*tomillo*), but these flavorings are not much used and most of what is consumed is brought in. Other favored flavorings such as cinnamon, ginger, and nutmeg are imported.

Hundreds of plants, both cultivated and wild, are in the local pharmacopoeia, and the majority of the plants used in folk medicine are gathered in the wild state. Nevertheless, a number of native and introduced plants which are cultivated or allowed to grow in the *solares* should be mentioned. Most of these plants are to be found mainly on the lands of herb doctors or *curanderos*, but a few are more widely distributed, such as rue and mayflower.

Castor-bean (*Ricinus communis* L.), *higuerilla, ricino, palma de cristi.* Common cultivated plant and escape; ornamental, economic, medicinal.

Chamomile (*Matricaria chamomilla* L.; *Anthemis nobilis* L.), dogfennel, mayflower, *manzanilla*. Second most common cultivated medicinal plant.

Chupire (*Euphorbia calyculata* H. B. K.), *chupirini*. Native to the Pátzcuaro Basin; planted along fencelines, as ornamental, and used for venereal diseases. Very common.

Datura (*Datura tatula* L.), *toloache, torescua*. Rare, but of many uses. Formerly important in native ceremonies and curations.

Horehound (*Marrubium vulgare* L.), *marrubio*. Common, mainly as a weed.

Lemon grass (*Cymbopogon citratus* (DC.) Stapf), *te de limón*. Rare.

Nurite (*Cedronella mexicana* Benth.; *Clinopodium laevigatum* Standl.; and possibly one or two other species), *noriten, te nuriten, te nurite, toronjil*. Mainly wild.

Opium poppy (*Papaver somniferum* L.), *adormidera, sharaka-tzitziki*. Rare.

Peruvian peppertree (*Schinus molle* L.), *pirul, árbol del perú*. Only a few trees for ornament, and medicinal parts.

Rue (*Ruta graveolens* L.; *Ruta chalapensis* L.), *ruda, acuitze-huariracua*. The most widely cultivated medicinal plant in the Quiroga area; found in approximately 10 percent of the patios and *solares*.

Te de Huerta (not identified definitely). Fairly common.

Tepoza (*Buddleia sessiliflora* H. B. K.; *Buddleia parviflora* H. B. K.; and at least two other species), *tepozán, jara tepoza, tepuza*. Mainly wild, but fairly common in cultivation.

Tobacco (*Nicotiana rustica* L.; *Nicotiana tabacum* L.; *Nicotiana mexicana* Schlecht.; *Nicotiana glauca* Graham), *tabaco, andúmucua, sinchacua*, and other terms for the first three native tobaccos; *buenamoza* and *árbol de tabaco* for the last species which was introduced from southern South America. The *buenamoza* is cultivated as an ornamental and medicinal plant and has escaped. The three native tobaccos at present are rather uncommon medicinal plants. Formerly tobacco was a panacea, and was much used by the Tarascans, especially in chewed form. The number of synonyms for the above four species, and for the various parts of the plant and forms of use, is enormous. Probably tobacco was the most valued nonfood plant among the Tarascans. An entire book could be written on the history and uses of tobacco in Michoacán. The decrease in local cultivation was probably due to the missionaries, who associated tobacco with the pagan ceremonies of the Indians. There is only one small commercial planting on part of a *solar*.

Several hundred species of ornamental plants are grown in the Quiroga area. They include trees (such as the lovely frangipani or *cundahua*—a *Plumeria*, ashes, cypresses, jacarandas, privits, and many others), shrubs and large climbing vines (such as bougainvilleas, poinsettias, daturas, yuccas, jasmines, palms, bananas, etc.), and a multitude of introduced and native flowering herbs, ferns, etc. In this report we have the space only to mention the more important of the shrubs and herbs. Less than 15 percent of the houses and patios have no ornamental herbs or shrubs; about 50 percent have the ornamentals planted in the patio; and the remainder, about 35 percent, have plants in *macetas* and also planted in the patio. The flowerpots, commonly of crude terra cotta and varying considerably in size, are arranged around the patio, in the corridor or back porch, and on ledges and benches. Frequently small *macetas* with succulents, tradescantias, ferns, and other plants are hung from the rafters or *vigas* in the corridor. The most modest establishments may have only two or three planted pelargoniums; the typical home will have several potted pelargoniums, ferns, and begonias, and several ornamental shrubs planted in the patio—such as roses, bougainvilleas, yuccas, etc.; and the homes of the well-to-do convert the inner patio into a mass of potted plants and planted herbs, shrubs, and trees of great variety. The most common floral association is of *malvas, geranios*, and *helechos*. (See list below for the meaning of these names.) Often the *helechos* are supplanted by *begonias, claveles*, or *azucenas*. These plants, together with roses and bougainvilleas, make up more than 80 percent of all the ornamental plants cultivated in Quiroga. The local terminology is quite varied, and often differs greatly from that employed in other parts of Mexico known to us. In the following list the leading ornamental plants are arranged in the approximate order of frequency in the Quiroga area. The first native name given is that which is most commonly used. Wherever possible the plants have been identified exactly, but in some cases only the genus or even only the family could be determined. It is of interest that such native Mexican flowers as the dahlia, cosmos, zinnia, marigold, tiger flower, tuberose, lantana, four-o'clock, and morning-glory, are not important. Perhaps this is because most of them are so common in the wild state. Among introduced flowers it was surprising to us to note the comparative paucity of such as oleanders, gardenias, and camelias.

Malva and Geranio (*Pelargonium* spp.). What the Mexicans call a *malva* or *malvón* is not a mallow but a *Pelargonium;* and the *geranio* is not a member of the genus *Geranium* (with one minor exception) but is also a *Pelargonium* of South African origin. There seem to be 5 to 7 species, represented by strains with white, pink,

red, blackish-red, and mottled flowers. The best known *malvas* are *bola de fuego, viuda alegre,* and *picada;* and the prized strains of *geranios* are *tres piedras, rey de los negros, granduque, filite, payaso, camelino, holandés, luto de Juárez azalea, aviador, triumfo, japonés, jicote,* and *de cartón* or *de guía.* Several of the Mexican strains surpass in loveliness any of the "geraniums" that we have seen in the United States or South America. These pelargoniums (growing from the ground, climbing on walls and frames, or in formal banked rows of pots) dominate the floral landscape in the Quiroga homes. Somewhat more than half of the homes have pelargoniums, with the *malva* being 50 percent more common than the *geranio.* We were unable to distinguish between the two in many cases, but in general the *geranios* have a more brilliant flower and harsh crennulated leaves while the *malvas* are more commonplace and have softer velvety leaves.

Helechos (chiefly Polypodiaceae) include at least a dozen native and introduced ferns among which the most common are *chino, lacio, de la fuente, aliento de niño,* and *japoneso.* It should be mentioned here that *chino* does not mean Chinese but curly or rough, and also pretty; and that *japonés* is often applied (for no reason known to us) to exotic plants which commonly are not of Japanese origin.

Begonia (*Begonia* spp.). There are at least eight cultivated species of begonia (some for their delicate flowers, others for the large and showy leaves), apparently all of them native to Mexico and some of them native and wild in the Pátzcuaro Basin. There are some 20 commonly cultivated and named strains among which the most important are: *Begonia gracilis* H. B. K. known as *carne de doncella* and *ala de ángel; Begonia incarnata* Link & Otto, also known as *ala de ángel,* and as *corazón de Jesús; Begonia imperialis* Lem., *begonia imperial* and *hoja elegante; Begonia fuchsioides* Hook., *corazón de María;* and others not identified specifically, such as *corazón de ángel, plateada, pantalla, primoroso, realzada, terciopelo, mulata, de la sombra, caracol,* and *china.*

Rosales (*Rosa* spp.) include four or five species and a number of hybrid roses among which the most common are *rosa de castilla* or cabbage rose (*Rose centifolia* L.), *rosa de cambray* (*Rosa alba* L.), and *rosa te* or tea rose (*Rosa indica* or *Rosa odorata* Sweet). Red roses dominate; there are comparatively few white roses; and yellow roses are rare. Roses are the chief ornamental shrubs.

Camelina (*Bougainvillaea glabra* Choisy and *B. spectabilis* Willd.), also known as *bugambilla* and *azalea de guía.* Both the purple (which is dominant) and the brick-red bougainvilleas are raised in Quiroga. These two South American climbing shrubs are great favorites, and may be seen on trellises, trees, and walls.

Azucenas comprise many species and several genera of lilies and amaryllises. The most common forms are white (*azucena blanca*) and yellow (*azucena amarilla*) lilies of the genera *Lilium* and *Hemerocallis;* and red, salmon, and red and white striped amaryllises of the genus *Hippeastrum* which go by such names as *pabellón* (from color resemblance to the Mexican flag), *azucena de Panamá* or *josefina* (salmon-colored), *azucena roja,* and *azucena amarilis.* On occasion the related tuberose (*Polianthes tuberosa* L.) will be termed *azucena,* but the more common names are *nardo* and *flor de novia.*

Ruda, the medicinal rue mentioned previously.

Clavel and *clave* (*Dianthus caryophyllus* L.), the carnation pink or clove pink of our gardens, and *clavelina* (*Dianthus barbatus* L.) which is our sweet-william, are very popular cut flowers. Carnations predominate.

Primavera (*Primula* spp.). The primrose is represented by at least two species.

Belén, *belem,* or *balsámico* (*Impatiens balsamina* L.). The garden balsam which riots in a variety of colors.

India, *coyol, platanillo, bástago azalea, canna* (*Canna indica* L.). The canna or indian shot is cultivated in the yellow and red forms.

Betulia, *vetulia, betunia, petunia* (*Petunia nyctaginiflora* Juss., and other species). White, red, violet, purple and almost black forms are present.

Alcatraz (*Zantedeschia aethiopica* Spreng.). The calla "lily."

Hortensia (*Hydrangea opuloides* Koch.). Hydrangea.

Azalea (*Rhododendron indicum* (L.) Sweet, and other species). Strains with pink, purple, and white flowers are most common.

Palmas (Palmae). A number of species of small potted palms are present including *cola de pescado* (*Chamaedora* spp.), *kentia* (*Howea* sp.), and several others. Also, several date palms (*Phoenix dactylifera* L.) are cultivated as ornamentals. The term *palma* is often applied to the native yucca (lily family) which is a very common ornamental.

A very important group of ornamentals is provided by the Crassulaceae or orpine family, especially in the genera *Echeverria* or *Cotyledon, Sedum,* and *Bryophyllum;* both introduced species and native wild plants. The more common cultivated forms include *siempreviva* (a general and a specific name), *rococó, concha* and *conchita, rueda de la fortuna, chisme, admirable, bruja, oreja de burro* and *oreja de ratón, roció, roña, dedo de la virgen,* and *amor tras de la puerta.* These vary in size from delicate *chismes* and *rococós,* through the *conchas* and *ruedas de la fortuna* (hen-and-chickens), to tall *orejas de burro* with attractive flowers.

Crespón (*Asparagus* sp.). A large climber. This term is also applied to the crape-myrtle (*Lagerstroemia indica* L.).

Perritos (*Antirrhinum majus* L.). Snapdragon.

Leocoyo (*Gladiolus* sp.). Gladiola.

Lirio and *lirio-iris, flor de lis* (*Iris germanica* L. and others) Blue to white irises.

The last group important enough to discuss here comprises the *cactos de maceta* or potted Cactaceae. In addition to large ornamental and economic cacti, there are several small ornamentals among which three are outstanding: (*a*) the *floricuerno* or *flor de cuerno* (named because often it is grown in a suspended horn) which is *Aporocactus flagelliformis* Lem.; (*b*) the related form or species known as *junco, junquillo,* and *flor del látigo* (names also applied to the previous cactus); and a plant which may not be a cactus (fleshy succulent, rose-colored flowers, no spines), which is known as *palma de Santa Teresa, teresita,* and *flor de lis.*

ECONOMIC TREES AND SHRUBS

The principal tree and shrub crops in the Quiroga area are derived from introduced Old World plants, as is true for most of the New World. Evidently the American Indian was able to fill most of his needs by gathering from wild plants. In Michoacán only a few of such plants are definitely known to have been cultivated prehistorically, and most of these were supplemented by collecting from their wild relatives. The most important of the native plants are as follows:

Maguey or *acamba* (*Agave* spp.), which is cultivated in several species, although wild agaves are utilized a little. Formerly the raising of agaves was highly important for the juice or aguamiel (*urani* and *ateri* in Tarascan) which was converted into a fermented drink or *pulque* (this Mexicano word has replaced the Tarascan *ateri*), and also for the roasted heart or cabbage and stalk, as well as for fiber from the leaves. At present the 500 or more cultivated agaves function principally as fence or boundary elements and as ornamentals; and only a minor number are tapped for the *aguamiel* from December to May (chiefly February to April). A method of tapping is used in Quiroga which we have not seen elsewhere. Instead of cutting off the flower stalk before it begins to flower and excavating a cavity at the base into which the *aguamiel* can flow, several of the *pulqueros* in Quiroga cut out a few leaves or *pencas* and excavate laterally at the base of the untouched stalk. The *pulque* of Quiroga (made chiefly by inhabitants of El Calvario) is of a very fine quality, superior to anything produced in the main *pulque* area near Mexico City, but there is not enough to meet the local demand. In 1945 there were but five families (four in El Calvario) which produced *pulque*. The man of the house is the *pulquero* who cuts into the heart or *corazón* of the *maguey* with a *capador*, scoops out the pulp and shapes the cavity with a spoonlike *raspador*, and then collects the *aguamiel* three times a day (morning, noon, and late afternoon). One man looks after from four to six *magueyes* during a season, which commonly lasts for only 3 months. Some of the agaves are tapped in the sixth year, although many are not ready until between the eighth and eleventh years of growth. One *maguey* plant has a nominal value of $3. A tapped *maguey* will yield from 2 to 6 liters of *aguamiel* a day, averaging between 3 and 4 liters. The woman of the house is the *pulquera* who elaborates and sells the *pulque*. A large pot or *olla* is washed, dried in the sun, then sterilized by bathing with alcohol which is set on fire. Mother of *pulque* (*pie de pulque*) is placed in the *olla*, *aguamiel* is poured in, and the pot is set out in the sun to ferment. Occasionally strengthening or flavoring is added in the form of alcohol, orange, banana, or pineapple. The *pulque* is sold in different strengths from fresh *aguamiel* or *aguamiel* which has just begun to ferment (*pulque dulce*) to a potent *pulque* which has fermented for a number of hours (*pulque fuerte*). The *aguamiel* and the different *pulques* are sold for 20 to 25¢ a liter or 5¢ a glass. During the season *pulque* can be purchased in one grocery store, at the Sunday market, and in the homes of the *pulqueras*. Probably the total production of *aguamiel* and *pulque* does not exceed 10,000 to 12,000 liters a year, which may be worth $3,000 retail. The *pulqueros* and *pulqueras* consider the making of *pulque* a sideline, and they are primarily *batea* workers. In the nineteenth century the municipality of Quiroga produced the distilled *vino de mescal*, but apparently almost the entire production came from areas outside of the present municipal boundaries. There is some roasting of cabbages and stalks, but this is mainly from wild agaves in the Malpais de Icuácato; and the chief source of *mescal* (the proper Mexican term for the roasted product which is consumed as one would eat a fibrous baked sweet potato) is the adjacent communities. January to May is the chief roasting season. Very little fiber (*ixtle* or *nequén*) is now made locally. In summary, the agave in the Quiroga area can be thought of as a remnant from the prehistoric and colonial days when it was of major importance.

Cacti are not important in Quiroga as fence elements, but some 300 plants are cultivated for their fruits and stems. The bulk of the cultivated cacti belong to the genus *Opuntia* and are prized for their fruits: (*a*) *Opuntia ficus-indica* (L.) Mill., *tuna mansa*, *tuna blanca*, *nopal manso*, *nopal de castilla*, *tenochtli*, *paré*; (*b*) *Opuntia robusta* Wendl., *tuna camuesa*; (*c*) *Opuntia megacantha* Salm-Dyck, *nopal de castilla*; (*d*) *Opuntia streptacantha* Lem., *tuna cardona*, *nopal cardón*; (*e*) *Opuntia hyptiacantha* Weber, *tuna chaveña*. The term *tuna* is used for sweet cactus fruit (from cultivated plants), and *joconostle* is applied to the sour or acid fruit from wild cacti. *Tunas mansas* are gathered from June to September. The tender flat stems sometimes are sliced and cooked as pot vegetables. In the sixteenth century, and possibly later, cochineal or *grana* was produced in the Pátzcuaro Basin; but there is no present production of *grana* although we noticed a few *Nopalea cochinellifera* (L.) Salm-Dyck southeast of Quiroga town. Minor in numbers but the queen of all fruit-producing cacti is the *pitahayo* or *tuna tasajo* which is *Hylocereus undatus* (Haw.) Britt. and Rose. This red-fruited cactus is frequently seen growing on rock and adobe walls and in trees. The fruit is most common from October to December.

Tejocote or *karás* (*Crataegus mexicana* Moc. and Sessé) the Mexican hawthorn, is cultivated a little (perhaps 200 trees, chiefly in the highland ranchos), but most of the fruit and all of the wood is obtained from the wild trees. The fruit, which is collected from September to February, is eaten fresh and also is converted into jam and jelly. There is some use of the *tejocote* as stock upon which are grafted quince, pear, and apple. Also, the young *tejocotes* constitute the favorite browse of the goats in the highlands.

Zapote blanco or *uriata* and *uruata* (*Casimiroa edulis* Llave & Lex.), despite its name does not belong to the Sapotaceae but belongs to the rue family. The term *zapote* comes from *zapotl* which the Mexicanos used for

sweet fruits as opposed to *jocotl* for acidulous fruits. This tree has a white flower and yellowish fruit which is harvested from April to August. Apparently this is a very old cultivated fruit tree since we saw no wild forms in the area. However there are fewer than 150 trees in the entire Quiroga area, usually occurring 1 or 2 in a *solar*.

Capulín or *xengua* (*Prunus capuli* Cav.), the native Mexican cherry or *cerezo*, is cultivated to the extent of 120 to 130 trees, but a large crop of fruit is obtained from wild trees in the highlands during June, July, and August when the *capulín* is the chief fruit consumed. The abundance of this tree in the area is indicated by the fact that the aboriginal name for neighboring Capula was Xenguaro (the two forms meaning place of the *capulín* in Mexicano and in Tarascan). The black *capulín* predominates over the white.

Aguacate or *cupanda* (*Persea americana* Mill. and *Persea americana* var. *drymifolia* (Schlecht. & Cham.) Blake), known in the United States as avocado and alligator-pear. About 110 *aguacates* are raised in the lowlands, which do not begin to supply the local demand. The season is April to September.

Guayabo or *enandi* (*Psidium guajava* L.). There are 73 guava trees in Quiroga, 37 of which are in the largest orchard in town. The principal season is December and January.

Chirimoyo or *ahte* and *uruata* (*Annona cherimola* Mill.). The fruit of this and closely related species is considered a delicacy, and is known under the names *chirimoya* and *anona*. There are but 63 trees, in the lowlands of Quiroga. The season is December to April.

There are few other native fruit trees worth mentioning. Some use is made of wild grapes, blackberries, and strawberries, but none of these is cultivated. The fruit of the few cultivated elderberry trees is consumed by the birds, and the same is true for the native mulberries. There are no mameys, *Spondias*, sapodillas, yellow sapotes, papayas, pineapples, and similar native fruits which require a warmer climate. A few hackberries, mesquites, and other trees of the steppelands occur, but they are ornamental curiosities.

In Quiroga and its ranchos there are 3,063 fruit trees of Old World origin, not counting the bananas, date palms, and 17 coffee trees, which are principally for ornament. Most of these trees are scattered by 1's, 2's, and 3's over the *solares*, with the exception of one orchard in a *manzana* near the springs of Atzitzíndaro which contains 417 peach trees, 47 apricots, 42 quinces, 46 pears, all 30 grapevines, and 72 other trees and shrubs. The principal fruit trees are: 1,987 peaches, 365 citrus fruits, 160 figs, 120 apricots, 81 loquats, 69 quinces, 66 pears, 56 apples, 31 pomegranates, 30 grapevines, 22 mulberries, 21 plums, 9 walnuts, and 6 cherries. Perhaps a third of the above trees are too young or too old or too degenerate to bear, and most of them are poorly attended excepting in 5 or 6 "orchards." Consequently fruit of all types is at a premium, and most of the fruit consumed in Quiroga is imported. There is such fruit hunger in Quiroga that much of the local fruit is consumed in a somewhat unripe condition.

The 1,987 peaches (*duraznos, melocotones, pérsicos, albérchigos*) are more widely distributed than any other fruit, being cultivated in 412 of the 797 occupied *solares*. Differences in cultivated strains and in the climatic conditions from the highland ranchos to the lowlands provide a season from June to September, although the main crop is picked in July and August. There are a number of strains which include white, yellow, and greenish-skinned peaches. We were unable to determine the relative proportions of clingstones to freestones. For the most part the local peaches are small, poorly flavored, and lacking in succulence. The peach (*Prunus persica* (L.) Batsch.) was one of the earliest and most widely distributed of Old World fruits in the temperate areas of the Spanish New World.

The 365 citrus trees or shrubs represent seven definite species, in addition to which there were three fruits (*naranja-lima* or *lima-naranja, limón pilato* and *limón romano*) with sweetish pulp of whose scientific identification we were uncertain. In Mexico there is a great variety of citrus species which were introduced very early (especially oranges and limes, which grow wild in parts of Mexico including southern Michoacán); and apparently a considerable number of hybrids and mutants exist. As a consequence of the many varieties and species, the terminology for the citrus fruits is in a state of anarchy; e. g., a lemon may be called a lime and a lime may be called a *limón*. Furthermore, the gradations in size and sweetness give rise to such terms as "lime-lemon," "orange-lime" or "lime-orange," "sweet lemon" and "sour lemon," "sweet lime" and "sour lime," and "sour-sweet lime." This situation, however, is a carry-over from the Old World where citrons, lemons, and limes so intergrade that at one time all three fruits (and their scores of varieties) were placed in one species. The approximate distribution of the trees by species was:

Limes, 165 trees known as *lima, lima agria, lima dulce, limón dulce, lima chica, lima chichona,* and *lima agridulce*

(*Citrus aurantifolia* (Christm.) Swingle). Actually, in Spanish usage, the trees are referred to in the masculine gender (ending in - o or -ero; *limero* in the case of the lime), and the fruit is placed in the feminine gender; e. g., *naranjo* is orange tree and *naranja* is orange fruit. The juice of limes and lemons is much used to flavor soups as well as in drinks.

Oranges, 104 trees of *naranjos* the majority of which are sweet oranges (*Citrus sinensis* Osbeck). Probably there are not more than six or eight sour oranges or *naranjos agrios* (sometimes incorrectly called *naranjo lima* and *limón pilato*) which belong to the species *Citrus aurantium* L. The sweet orange is the leading citrus fruit consumed in Quiroga, but most of the fruit is brought in from as far away as Nuevo León. The main season for gathering is November to January.

Lemons, 68 trees of *limones, limones agrios,* etc. (*Citrus limonia* Osbeck).

Citrons, 11 trees of *cidras, limones reales, cedros limones,* etc. (*Citrus medica* L.). Also, there are 6 *naranjos limas,* 6 *limones pilatos,* and 1 *limón romano,* which are variants or hybrids of some of the above species; and 3 *toronjas* or shaddocks (*Citrus grandis* Osbeck), and one *mandarino* (*Citrus nobilis* Lour.) The *naranjo lima* and *limón dulce* are sometimes placed in the species *Citrus lumia* Risso.

The remainder of the introduced fruits are very poorly represented and are not important, either in the economy or in the diet of the people, with the partial exception of the fig. These other fruits include:

Fig, the tree of which is *higuera* and the fruit *higo* (*Ficus carica* L.). These are principally black figs which ripen from June to November, and chiefly in August and September. There are 160 trees.

Apricot, *chabacano, albaricoque, or damasco* (*Prunus armeniaca* L.). There are 120 apricot trees. The crop matures from April to July.

Loquat, known in Michoacán as *níspero* (*Eriobotrya japonica* (Thunb.) Lindl.). The term *níspero* is applied to the medlar in some areas, and is also used for some native tropical fruits. There are only 81 trees to provide this prized fruit in November, December, and January.

Quince, *membrillo* (*Cydonia oblonga* Mill.). The fruit of the 69 quince trees is sometimes eaten raw, stewed, or converted into a liqueur, but most of it is made into a packaged preserve known as *cajeta de membrillo* or *ate de membrillo.* Most of the Michoacán *ates* are made in Morelia from fruits purchased in northern Michoacán. One of the leading *ate* manufacturers of Morelia is married to a native of Quiroga and owns the site of a former rum factory where there is a scattering of fruit trees. Quinces are gathered July to October.

Pear, the tree of which is a *peral* and the fruit a *pera* (*Pyrus communis* L.). The bergamot pear predominates among the 66 trees. July to September is the harvest period.

Apple, the tree is *manzano* and the fruit is *manzana* (*Pyrus Malus* L.). In Mexico a distinction is made between apples for eating raw (the finest large red apples are often called *manzanas de California,* because so many are imported from western United States) and a rather poor kitchen or cooking variety known as *perón.* In Quiroga there were 29 *manzano* trees (including a few *de California*), and 27 *perones.* Apples are gathered July to December.

Pomegranate, *granado* or *granado cordelino* (*Punica granatum* L.). The fruits of the 31 pomegranates mature June to September. This fruit, *granada,* is not to be confused with the *granada de china* or *granadilla* (of which there are three vines in Quiroga) which is a *Passiflora* native to South America despite one of its names.

The restricted number of cultivated grapes, mulberries, plums, walnuts, cherries, olives, etc., does not justify a discussion of them. It is notorious that the Spaniards throughout the colonial period attempted by laws and other means to prohibit or discourage the planting of plants that would compete with peninsular interests, especially grapes and olives. The paucity of bananas, date palms, and coffee trees is due to unfavorable climatic conditions, and the climate also explains the absence of the popular Old World mango. There are four clumps of sugarcane, which are not doing well.

ANIMAL HUSBANDRY

Although the Tarascans had a number of domesticated and semidomesticated animals (principally the dog and the turkey) animal husbandry in Michoacán cannot be said to have begun before the introduction of browsing pack and draft animals. Horses, European dogs, and pigs came with the first Spaniards in 1522. By 1530 horses, cattle, sheep, pigs, and chickens were being raised in the Pátzcuaro Basin and the lands north to Huaniqueo. Throughout the early colonial period the raising of horses and cattle remained in the hands of the whites because (1) both were costly to acquire, (2) cattle required considerable pasture and water and also were injurious to the crops planted by the Indians, and (3) an Indian might not own or ride a horse without special permission from the Government. The Indians took somewhat to the raising of sheep, and more so to pigs; but it was the chicken which became the most common and important introduced animal among the Indians. In part this was because they were already accustomed to poultry raising from their possession of turkeys, but probably a more important factor was the

series of laws and regulations issued by the viceregal government requiring each tributary Indian to raise a certain number of chickens each year. At one time the requirement was that every tributary Indian should raise at least 12 chickens (*gallinas de Castilla*) and 1 turkey gobbler and 6 turkey hens (*gallinas de la tierra*). Although the donkey or burro and the goat are not mentioned for the Pátzcuaro area in the first few years after the Conquest, they were undoubtedly there many years before 1560. The goat never became popular in the area, but the burro soon became the work companion of the Indian. It is claimed that the first burros were brought to Mexico in 1531, primarily so that mules could be bred. The Old World mulberry and the Asiatic silkworm were brought into the basin before the 1570's, and there is some indication that it might have been as early as the 1530's. However, the silk industry never prospered in the Pátzcuaro Basin. Among the Old World animals that entered the area without benefit of historical record were cats, European bees, European rabbits, and a few ducks, geese, and peafowl. Of these only the first two attained any local importance.

ANIMALS OF THE INDIANS

Archeology, the Relación de Michoacán, and various reports of the sixteenth century, provide some information concerning the animals, domesticated, tamed, or captured by the Tarascans. Definite domesticates were the dog and the turkey; and possibly a duck was domesticated. The cochineal bug and a honeybee were semidomesticates; and it is likely that the "hump-backed dog of Michoacán" reported in the 1570's by Hernández was the coati which is a common pet in the warmer portions of Michoacán. A number of carnivores were kept in a "zoo" in Tzintzuntzan, and many birds with colorful plumage were kept on hand to provide the feathers used in the beautiful Tarascan featherwork which is now a decadent and practically extinct art. Although snakes played an important part in the mythology and the ceremonial life of the Tarascans, there is no evidence that any were kept as "mousers" as is still done in some parts of Mexico. Actually the only truly domesticated animals the Tarascans had were the dog and the turkey.

MODERN DOMESTICATED ANIMALS

The modern Quiroga farmer is essentially a crop farmer, as were his Indian ancestors. However, he has taken over the Old World ox, burro, and horse to help him with his work; beef and pork have supplanted the food obtained by hunting deer, rabbits, and peccaries; and chickens have nearly displaced the domesticated turkey and the wild quail, pigeons, ducks, and chachalacas as providers of flesh and eggs. In addition, wool from sheep provides a supplement to the native cotton from the *tierra caliente*, and cats afford a certain amount of protection from rodents. However, it is doubtful that the prehistoric Tarascan farmer suffered much loss of maize through rodents, once the maize was placed in the granary, since the most harmful rodents are the rats and mice which came over with the Spaniards.

In order to obtain some idea concerning the animal economy of Quiroga we questioned every one of the 797 households as to what domesticated, tamed, and caged animals they possessed. We were greeted with some amusement, when after jotting down the understatements on oxen, chickens, burros, and other economic animals, we asked for the number of dogs, cats, tamed pets, caged birds, and any and all other animals that belonged to the household. However, these last items are the only ones for which we feel that we have accurate statistics. The degree of accuracy for the other animals varies considerably. The numbers we obtained (by questioning, supplemented by observation) for such animals as pigs, chickens, and beehives are not far wrong since these animals commonly were present and within our view. On the other hand, animals which usually were at work or at pasture (oxen, sheep, goats, burros, and horses) we were not able to check carefully, and the figures we present may be as much as 50 percent too low in some cases—especially for oxen and horses. In table 28 are listed the animals by common names (with no consideration for age, sex, or other condition), with the absolute number of each and the number of households which owned them. Comparative figures are given from the 1900 and 1930 censuses of the greater municipality.

TABLE 28.—*Comparison of animals owned in the municipio in 1945, 1930, and 1900*

Animal	1945		Number of head in municipio in—	
	Number of head	Number of households	1930	1900
Chickens	4,299	510	5,099	
Cattle	729	132	3,781	1,965
Dogs	569	369		
Pigs	483	209	1,106	1,144
Sheep	453	38	395	750
Beehives	451	70	1,405	
Cats	401	301		
Burros	203	118	1,130	278
Turkeys	193	68	310	
Horses	122	80	547	663
Caged birds	76	59		
Goldfish	60	1		
Pigeons	59	26		
Goats	47	9	167	197
Rabbits	5	4		
Mules	3	3	83	256
Deer	2	1		

CATTLE

The term "cattle" is understood in the United States to refer to taurine animals, but the Spanish equivalent "ganado" refers to a number of domesticated quadrupeds. The larger domesticated mammals are called *ganado mayor* collectively, and this term embraces oxen (*ganado vacuno*), horses (*ganado caballar*), mules (*ganado mular*), and sometimes burros (*ganado asnal*). The term *ganado menor* applies specifically to sheep (*ganado lanar*), but is also used to embrace goats (*ganado caprino*) and pigs (*ganado porcino*). The popular comprehensive term equivalent to our "cattle" or oxen in the broad sense is *res*; e. g., *once reses* means "eleven head of cattle." In order to get complete information we had to inquire after each animal by sex, age, and condition. That is, if we asked after bulls (*toros*) we would not be given the number of work oxen or bullocks (*bueyes*) but merely the adult males used for breeding purposes, even though some of the work oxen are not castrated males or steers. The situation was worse with poultry where we could not ask for chickens (*gallinas*) which would elicitate only the number of hens, but had to ask specifically after pullets (*pollas*), roosters (*gallos*), and young chickens (*pollitos*).

The ox (*Bos taurus*) is easily the most important domesticated animal in the Quiroga area, or at least it was in 1945 and 1946. We have not been able to discover the amount of damage done by the foot-and-mouth epidemic (*aftosa*) which swept over Michoacán after we left. Possibly not many of the cattle were killed by Government agents, since Michoacán was the seat of armed resistance to this part of the program for control of the epidemic. Oxen provide most of the work performed by animals, since they do all of the plowing and pull most of the carts. The work of mules, horses, and burros in light cultivation, threshing, and packing probably does not amount to one-half of the work performed by oxen. Furthermore, beef is the principal meat consumed, and the *abasto* charges usually constitute the chief source of municipal income. In recent years between 250 and 350 *reses* have been slaughtered annually in the Quiroga *abasto*. Most of these animals have been aged and feeble bullocks and cows. Since we did not check the individual records to determine origin of the slaughtered animals, we are not certain what proportion came from parts of the municipality outside of our area of study. However, the majority were of Quiroga provenience. Dairy cows are lacking, since the main functions of cows is to bear males for work purposes. Most cows are milked, but the production is little—running from 4 to 8 liters a day in the optimum periods (the first few months after coming "fresh," and during the rainy season) to about a liter in the driest portion of the year (February to May) and nothing at all when the animal "drys up." The bulk of the milk is consumed in boiled form, alone or with coffee (*café con leche* —a common drink), and the cooked cream (*nata*) also is eaten. Very little cheese is made and all of this is of the crude white salted type in small cakes known as *queso ranchero*. No butter is made since butter is practically unknown in the dietary of the average family. Formerly there was a Plaza de Toros on the Calle de la Reforma, but this area is now occupied by a garden and orchard, and the *jaripeos* (a type of rural rodeo which includes a bloodless form of bull fighting) are now held in an inclosed area between the Calzada Ramón Corona and the Calle Negrete. The *jaripeo* constitutes a very minor form of utilization. In summary, the chief uses of oxen are for work, meat, milk, hides, and fertilizer. The fertilizer is obtained by pasturing the animals in the fields to be fertilized, and by collecting the manure in the corrals.

Three types of oxen are recognized: (*a*) the *criollo* which is the local dominant breed, (*b*) the *raza pura* or *fina* (thoroughbred) which may be an occasional imported Hereford or Shorthorn, and (*c*) the *cruzada* which is the local *criollo* stock improved by breeding with some animal of presumably pure blood. Practically all of the cattle are *criollos* of middle-size Iberian type, probably mixed with Roman draft blood, with long horns (not so long as those of the related Texas longhorn), and solid colors normally ranging from buff and dun to reddish and black. We saw no pure breeds but there was evidence in the *cruzadas* of Hereford, Shorthorn, and possibly some other admixtures. Few head of cattle are pastured on the "range" or common *montes y pastos*, and most of the animals are rounded up or brought in from work to corrals daily. About one-fourth of the *solares* in town and nearly all of the households in the ranchos possess corrals. Cattle pasture on the wild grasses (chiefly various species of *Andropogon, Panicum, Paspalum, Aristida, Muehlenbergia, Bouteloua, Bromus, Eragrostis, Pennisetum, Setaria, Festuca*, and related species) and maize stalks left standing in the fields, and are fed *rastrojo* in the corrals. In normal years there may be as much as a 20 percent loss (chiefly March to June) due mainly to lack of water, poor pastures, and several epizootics (especially anthrax and the related blackleg). Practically all oxen (as well as horses and mules) are branded. This is done in the first or second year after birth, and usually in October and November. Despite the laws on brands and registrations (see item 6 under Municipal Finances, p. 113) only 115 head of cattle were registered in the tax collector's office in 1945, and but 325 were registered in 1946. According to our census the distribution of oxen in 1945 was:

Bullocks or work oxen (*bueyes*).	381 in 119 households.
Cows (*vacas*)	189 in 108 households.
Bulls (*toros*)	10 in 7 households.
Calves, yearlings, young bulls, heifers (*becerros, terneros, novillos*, and the feminine forms).	149 in 84 households.
Total	729 in 132 households.

Although 11 cattlemen or *ganaderos* were reported in the census of 1940, these people called themselves merely *agricultores* in 1945. The largest number of cattle any one person claimed to own was 20. Bullocks are commonly owned by two's, most of the owners having but one yoke and the largest number claimed being four yokes. Occasionally a farmer will have but one or three bullocks, which usually represents the recent death or slaughter of one. Nearly six-sevenths of the cattle are owned in the ranchos, including all 10 bulls. The Quiroga milk supply comes principally from the cows owned in town and in the neighboring ranchos of Atzimbo and Zirandangacho.

PACK ANIMALS

Horses, mules, and burros are used for packing, riding, and threshing, and very seldom for drawing carts or any other wheeled vehicle. The 122 horses (including marès and colts) are owned by 96 persons, chiefly in the ranchos. The largest number owned by one person was six. Horses are used principally for riding, threshing, and packing produce to town. The local horse (*Equus caballus*) is of medium size with a considerable variety in color and markings, and undoubtedly represents the local development of the peninsular arab. Mules (*mula* in the feminine and *macho* in the masculine) practically do not exist in Quiroga. Officially there is only one *mula*, that owned by the municipality. However we saw at least two others in the ranchos; they were being used in threshing wheat. Apparently mules were rather common in Quiroga until the coming of the railroads reduced the *arriero* profession and burros supplanted mules. Burros (*asno, jumento, burro* and the feminine equivalents) are the chief pack animals. In addition to bringing in the crops, they are used by the *carboneros, leñeros* and *batelleros* to bring charcoal, firewood, and *bateas* to town. In fact burros pack about everything that is to be transported locally excepting water in town (they are used to pack kegs of water in the dry season in the ranchos) and carcasses of slaughtered beeves which are carried from the *abasto* to the meat shops on the backs of horses. The local small and usually dun or mouse-colored burro (*Equus asinus*) is of the Andalusian strain which predominates in Mexico. The 203 burros are owned by 118 individuals. Farmers commonly own but 1 burro, and the score of *arrieros* own from 1 to 10 burros each. The *arriería* business was maintained on the basis of a much larger number of burros until the highway was completed 1937–38, after which most of the *arrieros*

abandoned the profession and turned their *bestias* loose in the fields where (according to local reports) large numbers died of hunger. (For details on the present status of *arriería* in Quiroga see the section on Transportation.)

GANADO MENOR

Sheep, although numbering 453 or more head, do not form an important part of Quiroga economy, since they belong to but 38 owners and are concentrated in the ranchos from Atzimbo to Icuácato. Most of the sheep belong to 6 men in Icuácato and La Tirímicua who run flocks of from 25 to 100 sheep. The local sheep (*Ovis aries*) appears to be of Merino type, producing a white short wool (there are some brown and black strains). Most of the wool is sold locally and woven into serapes. The sheep (*borregos* or *carneros*) usually are sheared in the early summer and the late fall. There is little consumption of mutton and lamb. Whenever a sheep is killed the skin is sold to one of the local tanners or to a weaver who uses the wool.

Goats (*chivos* or *cabras*) are few in number and are rather nondescript, and are not mohair, mutton, or milk type. Most of the goats are owned in Icuácato and are herded with the sheep. Nine people own the 47 listed goats, 21 of which belong to 1 family. There is a slight consumption of goat and kid, and a few goatskins are tanned each year in Quiroga. There is no production of goat milk and cheese in Quiroga town, but some milk and cheese is brought in occasionally from Icuácato. The dung from sheep and goat corrals is used as fertilizer.

Pigs, although classed as "small cattle," are commonly kept around the houses in the settlements and are never herded in the acorn-rich woods of mixed oaks, madroños, and pines. The pig in Quiroga is an exceedingly useful animal. He is the number one scavenger and "garbage-collector" (aided by dogs, chickens, and vultures), and is especially useful in cleaning up the human ordure on abandoned *solares* and throughout the outskirts of the settlements. Between such gleanings and any refuse from the kitchen, supplemented by a little maize, raising 1 or 2 pigs is not expensive. When ready for slaughter the pig (*cerdo, puerco, cochino, marrano, xanu, coyame, "cuch"*) is taken to the *abasto* by the owner or purchaser. Oxen and pigs are the only animals commonly slaughtered in the *abasto*, and the number of pigs slaughtered annually runs between 350 and 450. Pork meat ranks second in consumption. Boiled pork, cracklings, lard, and sausages are the principal forms of consumption, and ham and bacon are practically unknown. Lard is the chief cooking fat here, as it is over most of Mexico. Although a few pigskins are tanned, the skin is commonly cooked with the attached pork, and it is not uncommon to find in a serving of *pozole* (pork, hominy, and flavorings) a sector of skin adorned with a scattering of bristles. Local pigs (*Sus scrofa*) are predominantly of the old red Spanish breed which tend to run small, "razor-backed," and with comparatively few bristles. There is said to be a second breed, and several pigs of improved strains (*puercos finos*), which probably accounts for the occasional lard hog (castrated) and pigs of varied coloration among which is a dark-colored or blackish pig which may represent the Neapolitan strain. There are 483 pigs in 209 households. Usually there will be but 1 or 2 pigs in a household, but a few families own up to 16 pigs.

POULTRY

Chickens are the most widely disseminated of the domesticated animals, there being 4,299 in 510 of the 797 households in the area. The modal distribution is 3 hens and a rooster, but there are flocks of 37, 45, 46, and 60 fowls. Of the total number of chickens 3,881 were hens, pullets, and young chickens distributed among 499 households, and there were 418 roosters in 341 households. Those families which owned only roosters commonly had fighting cocks (*gallos de pelea*). One man owned 10 of these fine but noisy birds. Until about 1942 there was an ornate Plaza de Gallos on the Calle Guerrero, but it has been torn down. At present cock fighting is carried on in temporary arenas. By day the chickens range over the *solares* and up and down the streets, and at night they commonly roost on bushes, trees, and outhouses. Weasels, squirrels, skunks, foxes, coyotes and cacomixtles cause most of the losses of birds and eggs. Excess roosters and old hens are commonly sold to the restaurants, *fonderas* (women who sell food in the plazas and in *puestos* on the principal street corners), and wealthier people of the community. When the old bird has been cooked it ceases to be *gallina* or *gallo* and

becomes *pollo*. The eggs are commonly brought into the grocery stores (one or two or three at a time) and exchanged for so many centavos worth of lard, sugar, coffee, salt or whatever else may be needed at the moment. Although the local chicken (*gallina corriente*) is presumably derived from the so-called Spanish or Mediterranean breeds of *Gallus domesticus* (Andalusians, Minorcas, Leghorns, etc.), there is evident a considerable admixture of Indian Game, Rhode Island Red, Plymouth Rock, and possibly Wyandotte and Orpington blood. There is scarcely any creature more pitiful or more ridiculous than a poor half-plucked, lice-ridden, scabby chicken, which in its body and plumage unsuccessfully tries to combine three or four of the above strains.

In the turkey (*Meleagris gallopavo gallopavo*) we have an animal which may well have been domesticated in the Tarascan region. Some biologists (such as Nelson) believe that the Tarascan highlands are as logical a site for this domestication as any. Wild turkeys were present in the area until recently, but now the nearest wild flocks are some 50 miles to the southwest. The turkey, which is known locally as *guajolote* (from *huexolotl* the Mexicano name for the turkey cock), *cúcuno* or *cócono*, *pípilo* (Mexicano, from *pilpiltotol* "bird of the rich"), and *curucu* or *coruco* (Tarascan), has lost much of its pre-Spanish importance and there are only 193 turkey hens and gobblers in 68 households, chiefly in the ranchos. The largest number in any flock was 13. Few turkeys are kept in town because they are apt to sicken and die unless they have plenty of space. Dark-colored or black turkeys predominate, followed in numbers by white turkeys, white and black turkeys, and a few brown turkeys. In early Tarascan times the white turkey cock was venerated (under the name *tarechu*, which is now applied to the rooster) as a representation of the god Curicaueri. According to the Relación de Michoacán the Tarascans did not eat turkeys (at least they did not eat the turkey hens) which were fed to the animals in the royal or priestly "zoo" and were sacrificed to the gods. The feathers were used also as offerings and for ornamentation of the representations of deity. A number of terra-cotta representations of turkeys have been recovered from ruins in Michoacán, Colima, and Nayarit. Despite the important ceremonial position of the turkey, it is difficult for us to believe that turkeys were not eaten by the ancient Tarascans, especially in view of the fact that many of the neighboring peoples ate the bird. More than enough birds for sacrifice and for plumage must have been raised, since there are several mentions of pueblos paying a tribute of "domesticated turkeys" to the Tarascan ruler. It is possible that only the priests ate turkeys, since they were allowed to embellish themselves with turkey feathers. However, if the turkey were an avatar of a god, and something of a totemic representation, it is possible that the Tarascans would not eat the bird, while those peoples who had not domesticated the bird and for whom it had little or no religious significance would have no such scruples. At any rate, the turkey is now a highly prized item of food.

BEES

Beekeeping (*Melipona* spp.) for honey and wax was quite important among the ancient Tarascans, and it is still of importance, but apparently only Old World bees (*Apis mellifera*) are kept in hives. There are 451 beehives (*colmenas* or *cajones de abejas*), which belong to 70 households. Most of these (310) are kept in the ranchos as one would expect from the better pastures available in those areas. The distribution ranged from only 1 and 2 hives up to 14, 15, 16, 17, and 30 in a *solar*. The honey and wax commonly are taken in the fall. The honey is consumed by the family and sold to merchants in Quiroga and the beeswax is sold to the candlemakers in town. As is true of all Catholic communities in Mexico, there is an enormous consumption of candles in churches and in the homes (before household shrines and for illumination). The beehives are home-made wooden boxes commonly with a covering or roof of tiles. Due to the variety of flowering plants the honey varies considerably in flavor, although a flavor possibly derived from salvias predominates. Occasionally poisonous honeys are developed, probably from the nectar of a number of poisonous solanums, spurges, and asclepiases.

PETS AND OTHER HOUSE ANIMALS

Dogs outrank cats considerably in numbers (569 dogs to 401 cats) and slightly in popularity (369 households have dogs and 301 possess cats). Dogs are more useful, since they will guard houses, run down game, and can be used to help

herd animals, especially sheep. Dogs are proportionately more numerous in the ranchos than in town. Families may have up to six, seven, and eight dogs, but the usual number is one. Despite the great variation to be found in the dogs they all appear to be of Old World stock (*Canis familiaris*). Undoubtedly there has been absorbed into the make-up of the Quiroga dogs the various Indian strains (hairless dogs; fat little red dogs which were castrated, fattened, and eaten; etc.) in addition to the strains brought over by the Spaniards (sheep-dogs, greyhounds, bloodhounds, terriers, etc.). We saw only two or three which approximated the Mexican hairless dog (which is almost extinct), and none at all of the eating type. There were a few dogs of pure type brought in from outside of the area, including fox terriers and greyhounds. After a considerable sojourn and much wandering over the area, we are not inclined to rate the dogs of Quiroga very highly in honesty, frankness, and courage. A particularly vicious trait is the habit of many to approach silently from behind and bite without warning.

Cats (*Felis domestica*) were introduced by the Spaniards. They serve chiefly as lap pets and mousers. Tortoise-shell and tabby cats predominate, and there are but few black or white cats. A few families have angoras. Some families have up to five and six cats, but there usually is but one.

The only other mammals kept were two tame deer (*Odocoileus mexicanus*), three Old World rabbits or *conejos de castilla* (*Lepus cuniculus*), and two tamed local rabbits or *conejos de campo*, (*Sylvilagus floridanus*). Not caged but claimed by 16 households were 59 pigeons (*palomos, pichones*) which seemed to be the European *Columbia livia*. No apparent use was made of these birds, but they were fed occasionally. There were also four caged native mourning doves known as *huilota* and *torcaz* (*Zenaidura macroura marginella*). Besides these *huilotas* there were 72 caged birds in 55 homes. From the evidence of empty cages there were formerly many more caged birds, and we were informed that this was true up to the last revolution. Unlike in many parts of Mexico the favorite bird was not the mockingbird or *zenzontle* (*Mimus polyglottos leucopterus*), of which there were but four. The favored singers were 16 *jilgueros* (*Myadestes obscurus*) and four *clarines* (*Myadestes unicolor*). These two solitaires are caught in the wooded highlands near Quiroga, where often their rippling notes can be heard in the wooded canyons although the birds are seldom seen. The next group comprised 19 *gorriones*, including three *gorriones amarillos*. The term *gorrión* is applied to a number of the Fringillidae including grosbeaks, finches, and sparrows. Among the *gorriones* we saw there was a predominance of Mexican house finches (*Carpodacus mexicanus*) which are among the most common wild birds in the settlements. There were 15 Old World canary birds, principally of the greenish-yellow type. The last group of caged birds consisted of 14 parrots and macaws, most of which were not kept in cages but were chained to perches; and a few were so tame that they were allowed to roam throughout the patio and house. The local wild thick-billed parrot is not among these birds, and all of the four forms represented are brought up from the *tierra caliente*. There was one *guacamayo* or macaw (*Ara militaris*); five *cotorras, cotorritas,* or *periquitos* (*Aratinga canicularis*); and seven *loros, pericos,* or *cotorras* (*Amazona* spp.). One house had 60 goldfish (*pescados de colores*) in a tank in the patio.

GATHERING ECONOMY

We use the phrase "gathering economy" to embrace all the pursuits which are based on gathering or collecting wild plants and animals. One of the oldest, and the most important of these pursuits, is the gathering of deadwood and the cutting of trees for firewood and charcoal. Sun worship (associated with fire) was the basic element in the Tarascan religion, and the favored rite and sacrifice was the burning of wood in the temples. Although the introduction of Christianity put a stop to votive fires, wood cutting for domestic firewood and charcoal (the use of charcoal apparently was introduced by the Spaniards) continued at a rate perhaps accelerated by the introduction of steel hatchets and axes. As mentioned elsewhere, wood is the chief domestic fuel for cooking and heating, and is used on occasion as the sole source of illumination. In 1940 there were but two wood cutters (*leñero, leñador*) listed in the census, but in 1945 there were 12 whose principal occupation was the cutting, packing to town, and distributing of *leña* or firewood. Actually, the number is greater since many of the *batelleros, campesinos,* and *jornaleros,* whenever not otherwise engaged, earn a living by cutting firewood. Shrubs may

be cut and any deadwood may be cut or gathered, but theoretically by law permission must be obtained before cutting a live tree. Very little attention is paid locally to the forest laws of the State and the Nation. Most of the firewood is pine (*ocote, pino*), oak (*encino, roble*), and madroño. The wood is cut (and split if necessary) into pieces 2 Spanish feet in length and varying from about 5 to 10 cm. in diameter. A *carga* or burroload consists of 40 *pares* or 80 sticks. The wood is sold in Quiroga at $1 a carga for oak and madroño wood and 80¢ to 85¢ a carga for pine. Most of the firewood is produced locally, but a little pinewood is brought in by truck from the Pátzcuaro area. The wood is retailed at a slight profit in a number of private houses and in most of the small stores. The usual equipment of a *leñador* is an ax and a burro—his own or rented. It is impossible to compute daily earnings since this varies greatly according to the distance that must be covered to the nearest available tree, the size and species of the tree or shrub, and whether it is seasoned deadwood or green.

There were no charcoal burners or *carboneros* listed in 1940 and but three in 1945. Comparatively little charcoal is consumed in Quiroga, and much of the charcoal produced locally is taken to Morelia—by truck and by burro. What was said about wood cutters also applies to charcoal burners, and the number is considerably larger than that indicated by three full-time followers of this occupation. The equipment is the same as for wood cutting plus sacks in which to bring the charcoal to town. There are two formal charcoal stores or yards (*carbonerías* or *expendios de carbón*), and charcoal also is handled by a number of the grocery stores. Oak and madroño are the favored woods for charcoal burning.

There is very little cutting of trees for lumber. What is cut is chiefly to supply the rafters (*vigas*), planks (*tablas*), and shakes (*tejamaniles*) needed for some particular edifice. Since planks and shakes are little used in most buildings, the chief form of lumber is *vigas*. We saw no lumbering while we were in Quiroga. Much of the pine lumber utilized by the carpenters in Quiroga comes from the Pátzcuaro and Tacámbaro areas by truck. There are no professional timbermen in Quiroga.

WOOD FOR BATEAS

Of considerable importance, and once of very great importance, is the cutting of wood for *bateas* (painted trays). Formerly *bateas* were made of basswood or *cirimo* (*Tilia* spp.), of which there are three species in the area, but centuries of cutting this tree have nearly annihilated it, and now there are only a few individuals in some of the more remote canyons. During the nineteenth century, and possibly earlier, the *batelleros* (men who cut the trees and make the rough *bateas*) began to use pine instead of basswood, and now all *bateas* are made from pine wood. There are at least eight species of pine in the area, of which four are commonly cut for *bateas* (*Pinus michoacana* Martínez, *P. montezumae* Lamb., *P. leiophylla* Schlecht. & Cham., and *P. pseudostrobus* Lindl.). The first two species are the most common and the largest of the pines in the Quiroga area. Cutting of pines for *bateas* and for other purposes has removed all pines from the immediate vicinity of Quiroga, and now the *batellero* must go several miles into the highland woods to find a suitable pine (large enough, and with a minimum of knots and pitch). If the *batellero* cuts a pine on Government property or on the *ejido*, he must obtain governmental permission and pay a tax. Should he cut on private property, where the best pines are at present, he must pay from $5 to $15 a tree. There is a considerable amount of illegal cutting, both on public and on private property. The typical *batellero* is equipped with an ax, two curved short-handled adzes (*azuelas*) made in Quiroga or Pátzcuaro, a plane or *cepillo*, and a *compás* (calipers). After locating a suitable tree and making arrangements for cutting it (with the owner or forestry agent) the *batellero* and possibly one or two companions equip themselves with food for 3 to 6 days and make camp at the tree. One man can cut an average tree in one day, using only an ax. From the appearance of the stumps in the area, all trees are "beavered," and we saw no evidence of the use of saws. The average tree (costing from $10 to $15) will yield 12 to 18 dozen *bateas* of the more common sizes, which range from about 25 to 45 cm. in diameter. Formerly *bateas* were made which were more than a meter in diameter, but now it is almost impossible to find a tree large

enough for such *bateas*. The various names, shapes, and sizes of *bateas* are discussed in the section on the preparation of the finished product. After the tree has been felled slabs or chunks (known as *tejas* and *pencas*) large enough for the desired *bateas* are chopped and split off from the trunk. Due to lack of skill with an ax a considerable amount of wastewood is left between each slab. After all the slabs of economic sizes have been removed the badly mangled trunk commonly is left to rot. Between the chips from the elaboration of the *bateas* and the "skeleton," probably more than half of the tree goes to waste. The next step is to use the compass to mark the desired size on a slab and then with the ax bark the slab and round it roughly. The concavity of the *batea* or bowl is made with the adz, and the rim and exterior are smoothed with the carpenter's plane and occasionally with a file. The adz marks on the interior give a rippled effect which immediately distinguishes a Quiroga "lacquered" *batea* from one made in any other part of Mexico. *Batelleros* round off, adz out and smooth from 6 to 10 *bateas* of the larger sizes a day, and average about a dozen a day of the smaller sizes. This means that one man will spend from 2 weeks to a month on an average tree. Members of his family may replenish his supply of food, or he may go to his home whenever necessary. However, usually there are several *batelleros* working together on the same tree, since the slabs should be converted into rough *bateas* (*bateas crudas* or *bateas en blanco*) before they have had much chance to dry. Whenever a large tree is felled, each *penca* is worked into a rough *batea* before another *penca* is cut out. Although most of the *bateas* are brought down to Quiroga *en blanco*, tied on the back of a burro, some men pack the *pencas* to their homes where they can work in greater comfort; and this also makes available the chips and shavings for fuel. The younger married men are more apt to do this than the older *batelleros*. A dozen of the smaller *bateas en blanco* bring from $4.50 to $6.50, and a dozen of the larger sizes sell for from $7 to $9. Quite often a member of the *batellero's* family applies the *maquea* or slip before the *bateas* are sold to a painter. Varying with the skill of the *batallero* and the quality of the tree, net income per day (after subtracting the cost of the tree and assuming that the *batellero* owns a pack animal) runs from $1.50 to $6.75, with the average being between $3.50 and $5. Practically all of the *batelleros* are descendants of Indians and live in the Calvario district. Consequently most of the *batelleros* are *ejidatarios* and divide their time between making *bateas* and farming their parcels. In 1940 there were 24 professional *batelleros* listed, and in 1945 there were 51 in 40 households. The presumptive increase is not real since many of the individuals listed in 1940 merely as *ejidatarios* or *campesinos* were *batelleros* at the same time. Although some of the landless *batelleros* make *bateas* the year around, there is general slackening from May into September during *las aguas* which is the most active farming season of the year, and again in November and December into the first part of January which is the period of harvesting maize and *habas* and in which there are a number of important festivals. Estimates of *batea* production are given with the discussion of the finished *bateas*.

There are few other utilizations of trees in the Quiroga area. Although three of the pine species are good sources of turpentine (*Pinus leiophylla*, *P. montezumae*, and *P. pseudostrobus*) we observed no turpentine gathering in 1945 and 1946. Some turpentine is collected occasionally, and we saw a number of abandoned turpentine "cups" (small terra-cotta pots which are affixed to the trunk below an incision) in the highland forests. A little resinous torchwood (*ocote*, *cueramu*) is cut, but there are so few good pitch pines (*Pinus teocote* Schlecht. & Cham.) in the area that most of the *ocote* is brought from the Pátzcuaro area. When *ocote* for kindling and illumination purposes is made locally, one of the more resinous pines is selected, a section of the trunk is barked and scarred, and the resin is allowed to concentrate. After a few days, a thin slab is cut out of the exposed section, and this is split into slivers. The fir (*Abies religiosa* (H. B. K.) Schlecht. & Cham.) is used slightly for lumber and oleoresin, and its branches are used to decorate churches and shrines on certain festivals. The alder (*Alnus oblongifolia* Torr.), known locally as *tepamu* and *aile*, is cut for firewood, and its branches are used for decoration and in the making of booths or *ramadas*. The 12 or more species of oaks (*Quercus* spp.) are the chief source of wood for plows and yokes and for handles of axes, mattocks, etc., as well as fence posts, gate bars or *trancas*, and the firewood and

charcoal mentioned previously. Gall-apples, which develop on oaks and madroños, are used a little in tanning and formerly were employed in making ink. Madroño (*Arbutus* spp.) of four species is used for some farm tools, and there is a growing use of *Arbutus xalapensis* H. B. K., known locally as *madroño* and *pananks*, in the bowls, vases, toys, and other items turned out in several Quiroga shops. The easily worked wood of *jaboncillo* or *shapu* (*Clethra mexicana* DC.) is also used somewhat in the wood-turning shops. There was reported, but we were not able to confirm, the carving of masks from the wood of the *colorín* or *purenchecua* (*Erythrina flabelliformis* Kearney), which is semicultivated as an ornamental in the lowland.

WILD FOOD PLANTS

Next in importance after wood is the collection of wild food plants. The most important of these are the fruits collected from the *tejocote* and *capulín*, which are cultivated also; and following these in value are the wild *magueyes* for roasting, and the fruits of the wild cacti. The green, white, and sometimes red-colored acid tunas (known as *joconostles*) of *Opuntia fuliginosa* Griffiths, *Opuntia imbricata* (Haw.) DC. and other opuntias, gathered principally from July to December, are eaten raw, used for flavoring soups, and cooked in stews. However, the consumption of *joconostles* is minor in Quiroga as compared with the drier regions to the north and east. Among other wild fruits are grapes, currants, gooseberries, blackberries, strawberries, and elderberries, but these fruits commonly are gathered incidentally by *batelleros*, *leñadores*, *carboneros* and others with business in the woods of the highlands, and by children in the ranchos. A considerable number of native wild and introduced escaped plants are collected for pot greens and vegetables. Under the terms *quelites* and *bledos* are collected not only amaranths and chenopods, but a number of plants which we were not able to identify. The introduced wild mustard and wild radish are often used for greens, as are native and introduced purslane and dandelion. Various members of the mint, parsley, laurel, and composite families are used in flavoring foods. On occasion wild beans (*Canavalia* and *Phaseolus*) are gathered. Several edible roots and bulbs are collected which include *Dioscorea* (*camote del cerro*), *Phaseolus* (*jícama del cerro*), *Allium* (*surups*), *Dahlia* (*charahuasca*), etc. There is some gathering of water cresses and the edible seeds and rootstocks of waterlilies (*Nymphaea*). Several mushrooms are eaten on occasion. Of considerable importance are the fruits (some eaten raw, others cooked as vegetables) of several solanums, especially one known as *pichecuas*, which is gathered from August to November; the *ucuares*, which seems to be a *Valeriana*, and which is gathered from February to June; and the fruits of several species of *Gonolobus* and *Asclepias*, known as *talayotes* and *chicuipos*, which are gathered from August to December when not quite ripe and are cooked and eaten like young pumpkins. Also, the fruit of a wild *Rhus*, which resembles our lemon-berry and is called *limita*, is gathered in June and July.

Although the collection and use of wild plants for medicinal purposes is still of considerable importance in the area, we did not have the time to go into this matter thoroughly. Apparently there are hundreds of plants which are widely known and used for a great number of ailments, in addition to the medicinal herbs known only to the professional herb doctors. It seemed that almost every other plant we collected or asked about had some use. Among the more famous or common medicinal plants are the following: An *Aristolochia* (*yerba del Indio*, *guaco*, *pehuame*) used for animal bites, stomach aches, etc.; a number of *yerbas del golpe* (*Allionia*, *Oenothera*, etc.) used in poultices and teas for bruises and inflammations; a *Begonia* and the *chupire* (*Euphorbia calyculata* H. B. K.) used for venereal diseases; *tabardillo* or *cuiniqui-cumanchicua* (*Piqueria trinervia* Cav.) used for fevers; a number of daturas and nicotianas with many uses; and a long list of plants made into teas as diuretics, for colic, for constipation, for colds and chest complaints, etc., among which are ferns (*Adiantum* and *Polypodium*), nettles (*Urtica*), legumes (*Lupinus*, etc.), mints of several genera, *Lantana*, *Buddleia*, *Anoda*, *Loeselia*, *Smilax*, *Clematis*, *Eupatorium*, *Gnaphalium*, *Tagetes*, *Bidens*, etc., etc. The most common forms of application are in teas and poultices. There should be mentioned here the most famous medicine to come out of the New World in the sixteenth century (besides tobacco), namely the purgative *raiz de Michoacán* or "root of Michoacán." Hundreds of pages have been written since the days of Monardes and Hernández attempting to identify this plant. From all the available information it seems to belong either to the Apocynaceae, Asclepiadaceae, or the

Convolvulaceae. The latter identification is most likely. Probably the *raiz de Michoacán*, known as *pusqua* and *tacuache*, is an *Ipomoea* closely related to the jalap of commerce. However, we found no use of such a purgative in Quiroga. A number of wild plants are quite poisonous, and some of these are utilized for insecticides and raticides; e. g., the juice of a *Senecio* known as *clarincillo*, which sometimes poisons cattle, is mixed with brown sugar to produce an ant killer.

Other uses of wild plants are for dyes, oils, tannins, fibers, ornament, ink, and mucilage. At present commercial dyes and pigments have replaced most of the native coloring matters, but some of them are still used to a slight extent. Among the better known dye plants are *tiripo* or lovevine (*Cuscuta tinctoria* Mart.), mistletoe (*Psittacanthus* and other genera), indigo (*Indigofera*), *mucle* (*Jacobinia spicigera* (Schlecht.) Bailey), *palo azul* (*Garrya*), and *conguera* (*Phytolacca*). Most of these produce blue to purple colors. The *mucle* is especially important since it not only produces a good blue to purple dye, but a solution is used to whiten clothes, and infusions of the leaf are used as a remedy for dysentery, fevers, gonorrhea, etc. Formerly oils were obtained from *chia* (*Salvia*), pumpkin seeds (*Cucurbita*), and *chicalote* or prickly poppy (*Argemone mexicana* L. and related species). By the nineteenth century oils from *chia* and pumpkin seed were very little used, but castor-bean oil (*Ricinus communis* L.) from cultivated and escaped plants was produced commercially from December to April for use in illuminating churches. *Chicalote* oil continued to be produced in important quantities, primarily for the makers of *bateas*, e. g., in 1883 Quiroga produced 80 *arrobas* (about 320 gallons) of *chicalote* oil—almost entirely from wild plants which spring up in abandoned or fallowed fields. At present *chicalote* oil is made only by individual *batea* workers in El Calvario to use in filling special orders for old-style *bateas*. The principal vegetable tannin used in Quiroga is *cascalote* from the *tierra caliente*, but second in importance is *timben* or *raicilla de Tzintzuntzan* (*Calliandra anomala* (Kunth) Macbr.), which is gathered on the slopes near Tzintzuntzan and elsewhere in the region. The *timben* roots are sold at $2 an *arroba*, and the tannin is obtained from the root cortex. Many other vegetable substances have been used for tannin (such as oak galls, *Acacia* bark, oak bark, etc.), but they are unimportant at present. Some of the tannin sources and mistletoe formerly were used in the manufacture of ink, but all ink is now purchased from the outside. The wild fibers are used for some five or six purposes. Due to the large export business in chairs, *bateas*, pottery, and other items requiring packing, there is a considerable demand for packing material. In lieu of paper, sawdust, and excelsior, the packers in Quiroga use a variety of grasses, *tabardillo* (*Piqueria trinervia*) from uncultivated fields, *heno* or *tácari* (*Tillandsia usneoides* L.) gathered on oaks and firs, *aceitilla* (*Bidens*), *barba de chivo* (*Clematis dioica* L.), and other soft or pliable plants. Cattails or *tulillo* (*Typha* spp.) and tule or *chuspata* (*Cyperus laevigatus* L. and other species) are used in large quantities for the weaving of chair bottoms, but practically all tule used in the chair industry is brought in from the marshes of Tecacho and Chucándiro to the north. The cattails are also used in decorations for Corpus Christi and other festivals. The local bulrush, tule or *patzimu* (*Scirpus californicus* Britt.), is the principal species used in making of *petates* or mats. However, since Santa Fe owns most of the lake front near Quiroga, it is the people of Santa Fe who harvest the *patzimu* periodically and who make the *petates*. The people of Quiroga buy most of their mats from Santa Fe and Tzintzuntzan salesmen who come to the Quiroga plaza. Two or three persons in Quiroga make baskets and weave hats, but the material is chiefly palm leaves and fibers brought from the *tierra caliente*. Occasionally a person in Quiroga or one of the ranchos will elaborate fiber (*pita*, *nequén*, *ixtle*) from local *maguey* leaves, to make cordage and bagging, but practically all of the fiber is imported in processed form (cords, ropes, bags, mats, etc.) from the states to the north and east. Brooms and brushes are made from the roots of *zurumuta* or *zacatón* (*Epicampes macroura* Benth.) and some other grasses, and from the stems and foliage of *carátacua* (*Baccharis conferta* H. B. K., *B. heterophylla* H. B. K., and *B. ramulosa* (D. C.) Gray) which is known also as *escobilla* and *jara*. There is use of yucca fiber for a variety of purposes. Bulbs of a number of orchids are used for mucilage (this was the former source of the adhesive used in making feather mosaics), medicine, and ornament. Although many wild plants of the area have lovely flowers, the only ones that are com-

monly gathered are certain of the orchids. Thousands of orchids are used annually in decorating the churches, churchyards, and cemeteries at various religious festivals, especially Corpus Christi (when the *Flor de Corpus, Laelia speciosa*, is used) and All Souls' Day (when two orchids, *Laelia autumnalis* and *Bletia campanulata*, known as *Flor de Muertos, Flor de Animas*, and *Flor de Santos*, are used). When a family is too poor to buy soap it may use some of the *amoles* or saponaceous roots of several of the agaves, yuccas, and related plants.

Although the list of uses of wild plants is by no means completed, we will close this section by mentioning the large canes or *carrizos* (*Arundo donax* L.) which grow along the arroyos and ditches in town and near some of the lowland springs, and which are used for such items as frameworks for fireworks, carrying crates or *huacales*, and beds. Despite the space that we have devoted to a discussion of collected plants, they actually do not occupy an important place in the life of a majority of the people of Quiroga. Since clearings have pushed the vegetated areas back from the immediate vicinity of Quiroga town, and because of the paved highway and the many passenger and freight vehicles that pass over it, it is now much simpler to purchase most of the items (or the equivalents) which formerly were gathered, and possibly the time saved is spent to better advantage in pursuing regular gainful vocations.

WILD ANIMALS

Very little hunting or fishing is done by the inhabitants of the Quiroga area. Since they have no lake rights they neither catch fish nor hunt ducks. These items are purchased from peoples of Santa Fe, Tzintzuntzan, and other lake communities. There is not one professional hunter and there are scarcely more than six or eight persons who hunt consistently, either for pleasure or for food. This is far different from the conditions which obtained before the coming of the Spaniards. In prehistoric times (according to the evidence from archeology and the Relación de Michoacán), fishing for the various fish of the lake, hunting such birds as ducks, quails, and doves (and possibly wild turkeys and chachalacas), and hunting of deer, rabbits, squirrels, small rodents (gophers and rats), peccaries, armadillos, and carnivores (jaguars, mountain lions, wolves, coyotes, etc.) for flesh and skins were very important. Furthermore, zoos and aviaries were maintained. Now Quiroga has no lake rights, the forests have been extensively cut down, domesticated animals supply most of the requirements of flesh and skins, and the number of all game animals has been reduced to such an extent that some species are extinct in the area. Among the animals which have become extinct in the Quiroga area within the past 50 to 100 years are peccaries, wolves, jaguars, pumas, wild turkeys, and chachalacas. There are reported to be only a dozen or so deer left in the highlands back of Quiroga. Although there is no consistent hunting, quite a few individuals go out occasionally to shoot for food—principally rabbits and squirrels, and a rare armadillo, deer, or opossum. Firearms (shotguns and rifles) are most commonly used. There is no use of bows and arrows. Boys may employ slings, traps, and snares for the smaller mammals and birds. There are no large ferocious animals left in the area, but some of the smaller carnivores (coyotes, foxes, ring-tailed cats, bobcats, raccoons, skunks and weasels) which attack lambs, calves, and poultry, and the rodents (rabbits, squirrels, gophers) which eat the field crops are killed when the circumstances are convenient. There is practically no hunting of birds, since the doves and quails do not justify the expenditure of ammunition. Occasionally the young of deer, rabbits, squirrels, raccoons, and foxes are caught and brought up as household pets. Also a few solitaires, linnets, mockingbirds, and doves are caught and kept as caged pets. There are no important bat caves, and the use of bat guano is rare. No birds are caught or killed for their feathers, although the feathers of domestic poultry are sometimes used in making dusters. From time to time the hives of wild bees are raided for honey, but this practice is not common. There is no eating of grubs, grasshoppers, snakes, lizards, salamanders, turtles, or frogs, such as obtains in some other parts of Mexico. Neither are the eggs or *ahuautli* of the local "water cricket" collected and eaten. In terms of positive economic use wild animals are quite unimportant.

In terms of diseases carried, depredations on crops and stores, and folklore, a considerable number of animals are involved. The most common arthropods in the settlements are a great variety of flies (*moscas*), cockroaches (*cucarachas*), fleas

(*pulgas*), spiders (of which only the black widow and the tarantula are locally noted), weevils, dung beetles, ants, wasps (including a vicious type, known as *jicote*), mosquitoes (*moscos* or *zancudos*), bedbugs (*chinches*), lice (*piojos*), and chicken mites. Although feared and disliked, there are comparatively few ticks (*garapatas* or *turicatas*), *niguas* (*Tunga penetrans*), *jijenes* (*Simulium* sp.), centipedes (*cien pies*), or scorpions (*alacranes*). The most common diseases in which arthropods are vectors are typhoid, dysentery, malaria, and typhus. Represented on archeologic artifacts of the area and often referred to in folklore are butterflies, beetles, grasshoppers, ants, spiders, and scorpions. Seashells were imported by the prehistoric Tarascans, but at present mollusks are seldom eaten and only occasionally does a seashell for medicinal use appear in the market. Amphibians and reptilians are not numerous, although the ancient Tarascans used turtle carapaces for musical instruments, and they represented snakes, turtles, frogs, lizards, crocodilians, and salamanders in metal, stone, and terra cotta. The leopard frog, garter snakes, and lizards (chiefly spiny swifts) are the most common of these creatures at present. Frogs, garter snakes, gopher snakes, racers, rattlesnakes, "flying snakes," "horned snakes," and poisonous lizards are most commonly mentioned in traditions and folklore. There are only a few poisonous reptilians in the area, chiefly three species of rattlesnakes (*víboras de cascabel*), and two species of lyre snakes (*pichocuate*). The so-called coral snake or *coralillo* in Quiroga is a kingsnake, and the *escorpión* is a harmless *Eumeces*. Many birds were used by the prehistoric Tarascans as decorative motifs (including hawks or eagles, ducks, turkeys, parrots, owls, hummingbirds, etc.). In folklore and place names, the most common birds are the hummingbird, curve-billed thrasher, brown towhee, ducks, hawks, owls, and doves. The dominant birds in the settlements are linnets, wrens, warblers, thrashers, towhees, swallows, swifts, doves, sparrows, and buzzards. In the fields and in the highland woods there are numerous kingbirds, hawks, ravens, cowbirds, blackbirds, jays, woodpeckers, flycatchers, orioles, and other birds. The birds and fishes of the lake are not mentioned because they are not part of the Quiroga scene. The mammals represented by the greatest number of individuals are rodents, bats, rabbits, shrews, and carnivores, with opossums, armadillos, and deer far behind. The scourges of the field crops are the ground squirrels, cottontail rabbits, gophers, and several species of rats and mice. Among the carnivores there are definitely present in the Quiroga area one species of raccoon (known as *mapache* and *tejón*), one ringtailed cat (locally and incorrectly called a *tlalcoyote*), one weasel (*cuiniqui, onzita, comadreja*), three skunks (*zorrillo* and *zorrilla*, and specific names), one gray fox (*zorro* and *zorra*), one bobcat (*gato montés, mits-papu*), and occasional stray pumas, ocelots, and jaguars. Ths most common mammalian subjects of superstitions, stories, and other elements of folklore are coyotes, dogs, raccoons, skunks, opossums, deer, bats, gophers, squirrels, rabbits, jaguars, and pumas.

MINERALS

The entire Quiroga area is dominated by volcanic rocks (andesitic and basaltic lavas, brecchias, tuffs, and sands) and their derivatives. Quiroga and the Pátzcuaro Basin lie between the highly mineralized silver-lead zone of Guanajuato on the north and the copper-gold zone of the Balsas on the south. The absence of rhyolites, latites, and hornblende andesites (which in Mexico are so rich in metals) undoubtedly is the key to the paucity of metals and mines in the region of Quiroga. There are no mines worked in the *municipio* of Quiroga. Beaumont records that gold dust formerly was obtained from the red earths in the vicinity of Tzintzuntzan; gold has been reported for Acuitzio, Charo, Cuitzeo, Copándaro, Queréndaro, and Tarímbaro; gold was listed as an item of tribute from villages in the vicinity in the sixteenth century; and gold was worked and used by the Tarascans in the Pátzcuaro Basin according to the Relación de Michoacán and archeologic finds. No gold has ever been reported for the Quiroga area proper. Silver ore has been obtained from the northern flanks of Tzirate near Teremendo, and from Nahuatzen, Cuitzeo, Queréndaro, and Acuitzio in the general region. Silver also is mentioned in the Relación de Michoacán, and has been found archeologically in the region. Copper ranks, with gold and silver, among the three metals most often mentioned in the Relación de Michoacán; and it was the metal most used

by the prehistoric inhabitants of the Pátzcuaro Basin. However, most of it must have been brought in from the south since no copper ores are known from the basin, and the nearest deposits at Nahuatzen and Acuitzio apparently were not worth working. A few deposits of lead, tin, and iron exist to the east and south, outside of the Pátzcuaro Basin.

The Tarascans had a fair knowledge of metals and metallurgy, including the art of gilding copper. They recognized at least six metals for which we have the following names:

English	*Tarascan*
Metal	Tiamu
Gold	Tiripeti
Silver	Tayacata
Tin	Itzi tayacata
Lead	Pacapeti itzi tayacata
Iron	Pacapeti tiamu
Copper	Charapeti tiamu

Mexicano	*Spanish*
Tepuztli	Metal.
Cuztic teocuitlatl	Oro.
Iztac teocuitlatl, or Temetztli	Plata.
Amochitl	Estaño.
Temetztli	Plomo.
Tliltic tepuztli	Hierro.
Chichiltic tepuztli	Cobre.

Certain rocks, earths and clays are the most important mineral resources of the area, other than the arable soils. An enormous amount of unshaped basalt rock has been used in fences, and, to a lesser extent in house walls in the ranchos. A few structures in the *municipio* (churches, municipal palace, fountains, houses of the well-to-do, sidewalks, tombstones, etc.) are constructed in whole or in part of quarried stone. Most of this cut stone is derived from local quarries or *canteras*. The chief source is an andesitic outcrop on the southern flank of Tzirate. However, several closer quarries of andesite and andesitic tuff have been worked in the past. Also, reddish vesicular basalt and basaltic tuffs are quarried at times for cut stones to be used in masonry, or in crushed form as road metal. Most of the basaltic material has come from the scarp of the Cerro Huarapo and from pits and cuts in the Cerro Tucurullo and the Cerro de la Muñeca (Cerro de la Mina). The prehistoric grinding stones (metates, manos, mortars, pestles) may have been made from local basalts, but now the elaborated stones are purchased in Morelia and Pátzcuaro, and locally from peddlers who bring their products from the Pueblo de San Nicolás Obispo at the foot of the Cerro del Aguila. In the local archeologic sites are found idols, maces, hammers, picks, and axes which are predominantly of basalt. Laminated or slabby dike rocks provide some flagging, and may have been used also for prehistoric hoes.

Obsidian knives, arrowheads, mirrors, and ornaments are found frequently over the *municipio*, but all of the obsidian must have been brought in from such sources as Zinapécuaro and Zináparo. The salt mentioned in the Relación de Michoacán probably came from Lake Cuitzeo (Araró) or else from *salinas* in México, Guerrero, and Jalisco. *Turquesas* (turquoise) and *charchuis* (possibly jadeite) are mentioned in the Relación de Michoacán, and ornaments of jadeite, turquoise, and serpentine are found archeologically in and around Quiroga. However, there are no known deposits of these minerals in the Pátzcuaro Basin. The most probable sources are in the Ucareo-Maravatío area and in the Balsas Basin. Various forms of quartz occur in the local lavas, but probably all of the flints, jaspers, agates, and opals found archeologically or mentioned in the literature for the Pátzcuaro Basin were brought in from Maravatío, Guanajuato, and Querétaro. The chief source of sulfur, since before the Conquest, has been the Ciudad Hidalgo-Volcán San Andrés area. Lime is now obtained chiefly from merchants in Morelia and Pátzcuaro. Small quantities are produced in the *municipio* of Acuitzio. Some 70 years ago a deposit of niter or saltpeter (potassium nitrate, KNO_3) somewhere on Tzirate was reportedly worked for use in fireworks. We were unable to locate this "mina de salitre de cohetes" or "tierras impregnadas de sales nitrosas," which probably was a thin crust or efflorescence on the walls of some cave such as is known near Jerécuaro in Guanajuato.

All of the above-mentioned rocks and minerals are known locally by one or more names (Spanish, Tarascan, Mexicano). Among the more important terms are:

English	*Spanish*	*Tarascan*	*Mexicano*
Quarry	Cantera	Tzacapu haracuqua	(?).
Mine	Mina	(?)	(?).
Stone	Piedra	Tzacapu	Tetl.
Flagstone, flat stone	Piedra laja	Huiramba	Piastli.
Vesicular basalt, and some andesitic and basaltic tuffs.	"Tesontli"	Janamu, xanamu	Tetzontli.
Obsidian	Obsidiana	Tzinapu, Chinapo	Itztli, Itztetl.
Flint	Pedernal, Silicio	(?)	Tecpatl.
Salt	Sal	Etucua	Iztatl.
Lime, limestone	Cal, caliza	Hapu tzacapu curiracata	Tenextetl.
Sulfur (stone)	Azufre, piedra de	Tzacapu quinguimari	Tlequiquiztlalli.
Turquoise	Turquesa	Maruaticuacari	Xihuitl, Teoxihuitl.
Jadeite	Jade	(?)	Chalchihuitl.
Marble	Marmol	Itzimaruati	(?).
Gypsum	Yeso	Uiras	(?).
Alum	Alumbre	Jaripu	(?).
Crystal	Cristal	Tzarati	(?).
Lodestone	Piedra iman	Maruati tzacapu tirimariri	(?).

Black volcanic sands (near the Cerro Divisadero, the Mesa de Cutzaro, and the Cerro Hueco, on the slopes of Tzirate and Chino, and near Icuácato) are used in surfacing roads and yards, in making cement, and in tempering various clays. Because of the lack or paucity of rhyolites and hornblende andesites, there is little high-grade potters clay in the Quiroga area. Although no pottery is made in Quiroga, the local red clays seem to be as good as those obtained by the potters of Tzintzuntzan on the lower slopes of Tariácuri or by the potters of Santa Fe in the banks of the arroyos that descend from the Mesa de Santa Fe and the Cerro Guayameo. However, there are small deposits of white clays (seemingly of the kaolinite group) near Purenchécuaro and Chupícuaro used by Santa Fe; and a white clay or "piedra blanca" used in Tzintzuntzan is said to come from near La Tirímicua above Quiroga. We were unable to locate this deposit, which may have given the alternative name of Cerro de la Mina to the Cerro de la Muñeca. On occasion workable deposits of kaolin may be produced in basalts by alteration. Currently, the best clays in the general region are said to come from near Puruándiro, Zináparo, and the State of Guanajuato. Certain earths are used in producing the base or *maque* on the "lacquered" wares of Quiroga. The *tierra colorada* or red earth is obtained on the slopes of the Cerro de la Muñeca and elsewhère near La Tirímicua. The black earth or *tierra negra* is an earth rich in humus formed under the oak trees and on the wooded slopes of the area. Analyses of these two earths are given later with the discussion of Quiroga "lacquer" work. Large quantities of reddish clay within Quiroga and on the upper outskirts of town are used in the making of bricks, tiles, and other fired products. Also, the adobes (sun-dried bricks) for houses and walls are commonly made from grayish clay soils within Quiroga and the ranchos. These industries are discussed later. Some of the local terms are:

English	*Spanish*	*Tarascan*	*Mexicano*
Sand	Arena	Cutzari	Xalli.
Ash, tuff	Ceniza, toba	Hapu	(?).
Earth, soil	Tierra, suelo	Echeri, Echerendo	Tlalli, Tlalpantli.
Clay, mud	Arcilla, barro, lodo	Atzimu	Zoquitl, Zoquipololli.
"Adobe"	Adobe	(?)	Xamil.
Red earth	Tierra bermeja, colorada	Charanda	Tlalcuztli.
White earth	Tierra blanca	Hapupata, Uiras	(?).
Black earth	Tierra negra, prieta	Tucura (humus)	(?).
Sun-dried brick	Adobe	Yahuarucata	(?).

URBAN OCCUPATIONS

The farmers, farm laborers, wood cutters, charcoal burners, and *batelleros* constitute the rural workers (those who gain their livelihood mainly by work in the country), who live both in Quiroga and in the ranchos. Practically all of the others gainfully employed work and reside within Quiroga town, with the exception of the 31 men employed in transportation. Various categories can be set up (such as cottage crafts, food processing, building trades, etc.), but these categories are not mutually exclusive, and some individuals carry on several occupations at the same time or during 1 season or 1 year. For convenience in discussion we have used several conventional groupings, but these categories are not important in themselves. The important categories are the individual occupations, crafts or guilds (*gremios*), but the majority of the forms of employment were never organized into recognized guilds. Since the *gremio* as developed in Mexico was primarily for the protection of the interests of the members and for religious purposes, there has been a steady decline in its importance along with the decrease of the power of the church and with the improvement of the position of labor. The *gremios* in Quiroga retain very little of the earlier guild organization excepting a few officers whose main function is to collect money for the masses, fireworks, and other expenses connected with their traditional festivals. These festivals occur on the days of the patron saints of the various guilds. Also a number of the guilds contribute toward the expense of masses, fireworks, music, etc., during outstanding general holidays (such as Corpus Christi, and the day of San Diego—patron saint of Quiroga), and they likewise contribute to masses on specified days during the highly religious month of May (the month of Mary). There is no general agreement as to what crafts and occupations had guilds at one time or another in Quiroga. The consensus is that there were guilds of at least the bakers, weavers, shoemakers, masons, tanners, carpenters, and *arrieros*, and that during the nineteenth century the *arriero* guild was the strongest. At least the first three groups are still functioning, since each paid for the masses for one day in May of 1945. The farmers were once united loosely in support of the festival for their patron saint, San Isidro, which falls on May 15, but we observed no special festivities on this day while we were in Quiroga. Probably the agrarian *ejidal* organization has supplanted whatever other organization of farmers once may have existed. Although the Franciscan missionaries or Bishop Quiroga "assigned" the craft or *oficio* of working and decorating items of wood (principally *bateas*, chests, and writing tables) to the inhabitants of Cocupao-Quiroga, there seems to be no present organization other than a participation of some *batelleros* in the Corpus Christi festivities. A worth-while and much neglected field of research in economic history would be the study of the various *gremios* in Mexico. So far only the silversmithing guild has received much study.

COTTAGE CRAFTS

The term "cottage crafts," if literally applied to every type of manufacture or elaboration of goods within the home, would embrace the majority of constructive occupations in Quiroga, since nearly everything from weaving serapes and decorating *bateas* to making or repairing shoes, baking bread, and tanning hides is done in the home. However, this matter is complicated by two circumstances. A few central workshops have been established in the recently developed chair and woodturning business, and part of the work is done in these shops and part is farmed out and done in private homes by carpenters, painters, etc. Also, some of the weavers, bakers, painters, shoemakers, tanners, and others have large enough establishments in their homes to justify bringing in other workers. Under such an arrangement the situation is reminiscent of the organization of European trade guilds. The proprietor or *patrón*, who also works, is presumably the most skilled worker and is often referred to as *maestro* or "master." The skilled and semiskilled workers who come in daily are termed *oficiales, obreros, jornaleros,* and *peones*, which would be equivalent to "journeyman." If an individual craftsman is not definitely employed at some establishment he will be referred to as an itinerant journeyman; e. g., *obrajero obrero ambulante* or "itinerant journeyman weaver." Apprentices are usually of the family of the proprietor, and are known as family helpers; e. g., *obrajero ayuda familia.*

BATEAS

The most important cottage craft, until the appearance a few years ago of the chair industry, was the making of *bateas*, chests, and writing tables. Only the *bateas* are now made, and it is difficult to locate any of the painted wooden chests and writing tables outside of museums. During most of the colonial period Cocupao was widely known for these manufactures whose beginnings are commonly assigned to Bishop Quiroga. By 1822 the writing desks or *escritorios* had dropped out of the picture, and Martínez de Lejarza (1824) mentions only *bateas y caxas pintadas*. In 1884 both *bateas* and painted chests were produced in important numbers according to León (1887–88). From what we could learn in Quiroga, it seems that painted chests and trunks ceased to be made about the turn of the century or shortly before the Madero Revolution. It is fruitless to attempt to determine whether the Franciscan missionaries or Don Vasco de Quiroga assigned to Cocupao the *oficio* of woodworking. The essential fact is that some time between approximately 1530 and 1560 an attempt was made to balance the economies of the Indian villages in the Province of Michoacán by assigning to each village within a region a distinctive handicraft or occupation and a market day which would not conflict with those of its neighbors. According to this plan Tzintzuntzan was assigned pottery making, the tanning of hides was given to Teremendo, Capula was authorized to cut timber, etc. The origin of woodworking in Quiroga cannot be determined. Apparently the making of chests, trunks, and writing tables was a Spanish innovation. The painting or "lacquering" of wooden bowls and trays (*bateas*) probably is native, but this cannot be proved in the case of Quiroga. We know, from the Relación de Michoacán and other sources, that the Tarascans of the Pátzcuaro Lake Basin had the specific occupations of woodsmen, carpenters, makers of drums, canoe makers and makers of oars, painters in general, and painters of *xicales* (presumably half-calabash bowls, but possibly wooden bowls), and other workers with wood. From archeologic finds and from early sixteenth-century records we know that a variety of gourds and calabashes (*Crescentia cujete* L.) were decorated before the arrival of the Spaniards. The moot point is whether wooden bowls also were painted. In this report we are not concerned with the controversy over the Tarascan or Mexican origin of lacquer decoration since the technique used in Quiroga is definitely not lacquering or encrustation of the Japanese and Chinese types. Although some people believe that the Quiroga technique has degenerated from a technique that once was identical with that used in Uruapan, we could find no evidence for such a change. The principal changes have been in substituting linseed oil and pigments purchased at the store for local *chicalote* oil and pigments, and in the designs.

We have already outlined the making of the crude bowl or *batea en blanco*. When the *batellero* brings in the crude *bateas* they are given to members of his family to be slipped or are consigned to some woman who specializes in *maquea* and who does not have a *batellero* in her family. However, there are some painters who purchase the *bateas* and farm them out to be slipped. Also, there are some merchants who buy *bateas* and contract with various individuals for the operations from slipping through "varnishing" to painting. Let us start with the operation of the *maquea* or slipping. This is always done by women and girls, practically all of whom live in El Calvario (one woman lives in *cuartel* I, and three or four women live in *cuarteles* II and III outside of the Calvario area). The number of women who *maquean* varies considerably, since this work is done in addition to the regular household chores. The 1940 census did not list any *maqueadoras*, but we found 44 women and girls, between the ages of 10 and 60, who were doing this work in the winter and spring of 1945. The time they devoted to *maqueando* varied from only a part of one or two days in a week up to full time employment (in the case of a few unmarried and widowed women who were not loaded with the full responsibility of running a home). More than half of the *maqueadoras* were in families which had one or more *batelleros*. The equipment consists of a metate (*tlalmetate*), usually legless (*ticuiche*) and of a smooth grain, and mano or muller for grinding the earths used in the slip; a *zalea* or piece of sheepskin with which to apply the slip; and a *trapo* or rag of linen, hemp, or cotton used to burnish. The raw materials, besides the *bateas en blanco*,

include two kinds of earths, linseed oil, *japán* or japan drier, and lampblack. The earths may be purchased from some individuals in El Calvario (from 10¢ a half kilogram down to $2 for a burro-load of two bags of uncertain weight), or the *maqueadora* may herself go to one of several hills in the Quiroga-La Tirímicua area (La Muñeca, Cerro Chino, etc.) and dig whatever she needs. It was not uncommon to see a woman and several children coming down the trail with *bateas* full of reddish or blackish earths. One of the earths was referred to as *tierra colorado*, and seemed to be simply very hard clods of reddish earth. All that is done to prepare the *tierra colorada* is to grind it to a very fine powder on the metate. The other blackish earth is called *tierra negra* and *tierra prieta de encino*, and is country soil mixed with humus which is obtained beneath oak trees. This blackish earth is burned or roasted, ground to powder on the metate, and mixed with lampblack. The soot or *tizne* is obtained from petroleum (*humo de petroleo*), from pitch pine (*humo de ocote*), from the interior of corncobs (*humo de olote*), etc. Through the courtesy of the Geological Institute of the National University of Mexico we obtained analyses of these two earths. The results surprised us, especially as to the respective proportions of organic material, but we present them for whatever they are worth.

	Tierra negra or tierra tocura	*Tierra colorada or tierra charanda*
	Percent	*Percent*
H_2O (water)	4. 98	1. 66
SiO_2 (silica)	35. 03	38. 35
Al_2O_3 (alumina)	15. 57	18. 89
Fe_2O_3 (ferric oxide)	1. 00	3. 30
FeO (ferrous oxide)	1. 81	-------
MnO (manganous oxide)	. 05	. 08
CaO (calcium oxide)	1. 43	1. 79
MgO (magnesia)	. 04	. 07
Na (sodium)	. 19	. 10
NH_3 (ammonia)	. 15	-------
TiO_2 (titanium dioxide)	. 05	. 08
Cl (chlorine)	. 30	. 15
P_2O_5 (phosphoric pentoxide)	1. 00	1. 33
SO_3 (sulfur trioxide)	1. 43	1. 49
Unidentified organic	36. 99	32. 76
	100. 02	100. 05

It is quite evident from the above analyses that the people of Quiroga do not use two earths presumably very important in the Uruapan technique, namely a dolomite known as *tepútzuta*, and a ferruginous lime called *igüetacua*. On the other hand, the *tierra colorada* of Quiroga seems to be very close to or identical with the *hehuetacua* of Uruapan, used for red exteriors and backgrounds. Both contain hematite or red ochre as the coloring pigment.

The first step in the application of the slip or *maque* is to apply the linseed oil (mixed with japan drier in proportions of two to one) as priming, then add the powdered *tierra negra* to the interior or concave surface, and let dry in the sun for 1½ to 2 hours. A variation of this procedure is to apply the oil, then the straight *tierra negra*, and finally the *tizne* or lampblack which has not previously been mixed with the *tierra negra*. A common variation is to mix the linseed oil and japan drier with the *tierra negra* and *tizne* and apply the composition with the *zalea*. Thus far the main difference from the classic Uruapan technique is that dolomite (*tepútzuta*) and the rendered fat or grease of the *axin Coccus* are not used in the basic composition. Although some people term the *maque* composition a lacquer (*laca*) or a varnish (*barniz*), it is neither. No lacquer (exudation of a *Rhus*) is used, and the only gummy or resinous material is that in the japan drier. Presumably the oil of *chia* (*Salvia*) is superior to all others in making the *maque*, but none has been used locally within the memory of any of the people. During the nineteenth century or earlier *chia* oil was supplanted by oil from the *chicalote* poppy (*Argemone*), and now this oil has been supplanted almost completely by linseed oil. It is claimed that the common use of *chicalote* oil (both in slipping and in painting) ended some time prior to 1918. On occasion *chicalote* oil is still used on special orders (commonly from *arrieros*), and then it is for a green *maque* or slip rather than the predominant black. To prepare this oil some *chicalote* seed is toasted, ground on a metate, mixed with hot water, and the oil that rises to the surface is absorbed by a rag which is squeezed into a calabash *tecomate*. Sometimes the ground *chicalote* or *masa* is placed in a cloth bag and the oil is squeezed out. The green for this special *maque* is obtained by mixing naples yellow, prussian blue, and gypsum. The final step for the interior *maquea* (black or green) is to polish vigorously with the cloth or *trapo*. The exterior *maque* is invariably red, and is always applied after the interior has been slipped. The procedure is essentially the same as for the black *maquea*, excepting that only

tierra colorada is used with linseed oil and the japan drier. When only a small number of *bateas* are worked all steps of the *maquea* are completed within 1 day, but if several dozen *bateas* are being worked usually the black is applied and polished one day and the job is completed the next day.

The number of *bateas* that can be completed in 1 day varies with the age and skill of the worker, how much time she can spare from household duties, and the size of the *bateas*. Because of these factors we found great differences in output per day or week of any given size, and the women could not estimate rate of work in terms of hours. We calculated range, average, and mode for the time consumed on different sizes, but we do not feel that these figures are very accurate or significant. The basic consideration is the size of the *batea*. Apparently there are two systems of classification (one traditional, and the other possibly established by some of the merchants) which overlap somewhat and occasion much confusion. The traditional system may have begun with the Spanish yard and subdivisions, which became converted into metric equivalents, of which there exist the sizes known as *frutera* (fruit bowl or fruit tray), *media frutera, chuchería, cuarta* or *chica*, and *jeme*. The newer system goes by numbers (theoretically from 1 to 4 or 5), of which only 2, 3, and 4 are used. Due to the lack of large trees, practically no *bateas* larger than 50 cm. in diameter are made, and the largest fall into the *media frutera* and *chuchería* classes. It was reported that once in a long time *bateas* ¾ of a meter, 1 meter, and even larger were made, and these were referred to as *especiales*. In such cases the bowls often took on the oval or oblong form of a tray. The following tabulation gives the names and ranges we obtained for the various sizes.

Traditional	*Recent*	*Diameter (cm.)*
Especial	----------	(?).
Frutera	----------	(?).
Media frutera	----------	50–80.
Chuchería	Dos (2)	Ca. 45.
	Tres (3)	34-40, mainly 36–38.
	Cuatro (4)	30–34, average 32.
Cuarta or chica	----------	25–27, usually 26.
Jeme	----------	Ca. 16.

Also, tiny *bateas* (known as *bateitas*) are made for use as earring pendants (*aretes*), and these are known as of the size of a peso or a half peso (*tostón*). Probably more than 90 percent of the *bateas* made in Quiroga are *cuarta, cuatro,* and *tres*. Locally there seems to be much confusion between *cuarta* and *cuatro,* and between *tres* and *chuchería*—at least among the *maqueadoras*. Production of No. 3 *bateas* varied from 1.5 to 3.5 dozen a day, for which they were paid 60¢ to 85¢ a dozen—possibly an average output of 2.5 dozen a day at 75¢ a dozen. No. 4 *bateas* were slipped at rates varying from 1.5 to 5 dozen a day, with pay 60¢ to 70¢ a dozen—an average production of 3 dozen a day at 65¢ a dozen. From 1.5 to 12 dozen *cuartas* were slipped a day, for which they received 40¢ to 75¢ a dozen—averaging 3.5 dozen a day at 55¢ a dozen. This income is not net. The materials purchased may cost from 10¢ to 30¢ per dozen *bateas*. The women themselves compute an average net income of $6 to $7 a week derived from *maqueando*.

After the *maquea* the *bateas* go to the merchant, painter, or other entrepreneur who contracted for the work, unless they are owned in the family, in which case usually the woman who applied the slip also paints on the decorations. The majority of the *bateas* are slipped on contract. Before painting can begin a "varnish" of shellac (*japán*) dissolved in turpentine is applied. There are a few families which do nothing but apply this *barniz* to *bateas* belonging to some of the merchants, but most of the varnishing is done by the *pintores* or people who paint on the decorations. All of the painting is done in the homes of the *pintores*. The painters of Quiroga are divisible into three groups: (*a*) those who paint only *bateas*, of whom there are about 35; (*b*) those who paint *bateas*, chairs, pottery, spoons, earrings, etc., who number perhaps 20; and (*c*) those who paint chairs and other items, but not *bateas*. Most of the 50 to 60 people who paint *bateas* do so on contract. The painters run in age from 12 to 48, and there are a few more men than women painters. Painting is a full-time occupation excepting for those who paint only *bateas*, since there is not a sufficient supply of *bateas* for all during the rainy season. The other painters switch to painting chairs, pottery, etc., during the slack season. Equipment consists of brushes and a variety of bottles, cans, and terra-cotta jars to hold the pigments, oils, drier, turpentine, etc. The brushes are broad *brochas*, used for applying the varnish, which are purchased from the stores at prices ranging from $1.25 to $2, and fine *pinceles* for painting on the decorations. Most of the painters make their

own *pinceles* from the hair of dogs, cats, and squirrels. The principal materials are the pigments and paints. For backgrounds, other than the black or green of the *maquea*, prepared paints are commonly purchased in tins. Locally prepared pigments of vegetable, mineral, and animal origin prevailed into the nineteenth century. Among the more important of these were lampblack and boneblack, red and yellow ochres, yellow from *tiripo* (*Cuscuta*), blue from indigo (*Indigofera*), carmine from cochineal, and white from gypsum. At present practically all pigments are purchased in powdered form from the local stores at rates varying from $0.20 to $1.60 an ounce according to the color and quality. Local pigments have not been used within the memory of living persons. The most important colors are black, red and orange, green, yellow, white, blue, pink, and purple. The black is lampblack; most of the red is vermillion, with some rouge and venetian red; green is compounded from blue and yellow; yellow includes ochres and naples yellow; the white is zinc, lead, and some gypsum; most of the blue is prussian blue, with some ultramarine and cobalt; carmine and the reds are used in developing pink tints; and purple is compounded from blue and the red-rose-pink pigments and mixtures. Linseed oil ($1.90 to $2.50 a liter), turpentine ($1 to $1.30 a liter), and japan ($0.25 an ounce dry; $1.20 a liter liquid) complete the list of materials used. A typical painting mixture consists of 1 liter of linseed oil, 1/5 liter of japan, 500 gm. of coloring pigment (this amount varies greatly), and a little turpentine.

If not yet varnished, one coat (*una mano*) of *barniz* is applied to the *batea* and then it is placed in the sun to dry—which usually takes about 4 hours. Most of the painters decorate directly on the varnished surface, which has the black tone of the *maque* underneath. The few who occasionally paint on a cream, yellow, or other base, must apply this background. Normally the next operation after varnishing is the final decorating, which consists of painting designs in two or more colors. The most common design is a number of conventionalized flowers with leaves and stems which fill most of the field. The grouping varies from painter to painter, but most of the flowers are either clustered near the center or are distributed in a peripheral circle. There is little formal division of the field, or arrangement of decorative elements in zones. Most of the flowers are fanciful, colorful, and resemble (in petal arrangement) either roses or composites. The orchid, contrary to practice in Uruapan, seldom is depicted. A few painters have attempted landscapes, which range from local lake and village scenes to scenes that must have been copied from postcard or other illustrations of the Alps, Japan, etc. Some painters include birds (fanciful, generalized, parrots, hummingbirds, etc.) among the flowers. We heard that at one time there was considerable depiction of humans, birds, snakes, butterflies, grasshoppers, fish, coyotes, and other animals, and the employment of mottoes and sentimental phrases, but we saw no examples of such work. The decoration is done entirely by free-hand painting and there is none of the encrustation such as is done in Uruapan, or incision as in Olinalá. The dominant colors for the flowers are yellow, white, blue, pink, and combinations of these colors. The normal sequence is to first paint the flowers (large ones, then the small flowers), then the buds if any, and finally the foliage. Some families with several painters are organized somewhat like an assembly line. One member paints only one or two elements, and then passes the *batea* to a second painter who adds his quota, and so on. If the drier used is of good quality and there is ample sunshine a completely painted *batea* will dry in 4 or 5 hours, but sometimes up to 8 days is needed. Painters (who apply varnish, background, and decoration) average $1 a dozen for the *cuartas* which they turn out at rates from 2.5 to 6 dozen a day or an average of about 4 dozen. They receive $1.50 a dozen for the *cuatros*, of which they paint 2 to 4 dozen a day and average about 3 dozen. The average painter can turn out 2 dozen No. 3 *bateas* a day, for which he gets $2 a dozen. Gross earnings run from $3 to $10 a day, with the average probably being a little more than $4. Net earnings may average around $3.50 a day.

The *bateas* go from the painters to local "tourist shops," traveling merchants or agents who sell on commission, purchasers from the large curio stores in Mexico City, Morelia, Guadalajara, Zamora, and elsewhere, and are sold to or consigned to a number of small merchants who may keep a few on display in their grocery stores, restaurants, etc. Local wholesale prices (as of

the spring of 1945) averaged $8 to $10 a dozen for *cuartas*, $10 to $12 a dozen for *cuatros*, and $14 to $18 a dozen for *treses*. These prices were given to us by the painters and not by the curio merchants. These prices indicate that we were given consistently low figures for income per dozen *bateas* by the *batelleros*, or the *maqueadoras*, or the *pintores*, or by all three groups since the sum of the average costs per operation does not equal the wholesale price in any case. For example, the *batelleros* sold 1 dozen *bateas en blanco* of the *cuarta* size for an average price of $5; the average cost for *maqueando* these *bateas* was $0.55; and the average cost of painting was $1. This totals only $6.55 per dozen, as compared with a low wholesale figure of $8. Perhaps the gross income of each person involved in the elaboration of *bateas* should be increased 20 to 25 percent. There was no general agreement as to how many *bateas* of all sizes were made in Quiroga each year. Estimates ran from 2,000 to more than 10,000 dozens a year. Although Quiroga *bateas* can be seen all over Mexico and in many cities of the United States, we doubt that the annual production is more than 5,000 or less than 2,500 dozen.

CHAIRS AND CARPENTERS

As indicated in the discussion of *bateas*, carpentry has been an occupation in the Pátzcuaro area since prehistoric times. During the colonial period the principal items made by the carpenters of Cocupao were chests and writing tables for export, and such items of domestic use as benches, tables, chairs, windows, and doors. However, since many of these homely items were either lacking in most homes (e. g., chairs and windows) or were homemade, the professional carpenters were not numerous. This continued to be the case until 1939 when the commercial chair industry was established in Quiroga. According to the 1940 census there were 35 carpenters in Quiroga, and by 1945 the number had risen to 58. This is an extraordinarily large number for a community where houses are not made of wood. These carpenters can be divided into three groups; (*a*) some seven or eight men who carry on traditional carpentry, but who never make chairs; (*b*) about 20 men who elaborate a variety of items from tool handles to chairs; and (*c*) another 20 or so men who make only chairs. All of the men in the first group and a number from the two other groups own their carpentry shops, which usually consist of a room in the home equipped with workbench, vise, planes, hand saws, chisels, mallet, and drawshave. The majority of the carpenters concentrate on chair making, which was the leading industry in Quiroga in 1944 and 1945 but which had begun to decline in 1946 due to a reduction of orders from the United States.

The Quiroga chairs are made of pinewood, with seats of tule, in six sizes. Three general operations are involved in the manufacture of these chairs. The carpenters cut pine lumber into the required pieces and assemble the frame. Then women and children weave the tule seats onto the frames. Finally, painters varnish and decorate the chairs. Although the chair industry started in 1939 on a cottage handicraft basis, it is now concentrated in the hands of about a dozen men who own 8 workshops or *talleres de sillas* in which more than 95 percent of the chair frames are made. All of the weaving of the chair bottoms (*entulando*) is farmed out on a piece-work basis. Much of the varnishing is done by employees of the larger shops, who also pack the finished chairs for shipping. Perhaps one-third of the painting is done in paintshops attached to the chair factories, and the remainder is done in the homes of the painters.

All of the pine lumber comes from mills in the Pátzcuaro and Tacámbaro areas. The larger operators purchase the lumber at the mills and have it trucked to their shops in Quiroga at costs varying from 30¢ to 32¢ a board foot. There is one lumber dealer in Quiroga who supplies the small operators and the individual carpenters. Lumber purchased in small quantities costs from 34¢ to 45¢ a board foot. The average price of the lumber consumed in chairs is about 32¢ a board foot. The difference in cost of the lumber explains in part why there are only four or five individual carpenters who make chairs. The majority of the carpenters work full or part time in the eight shops which employ from 2 to 15 carpenters each. The number of employed or journeymen carpenters varies from 39 to 48. These numbers include quite a few individuals who are "rough carpenters"—actually manual laborers who do odd jobs in the chair shops but who are not experienced carpenters. Chair carpenters earn from $3 to $6 a day. The larger shops are equipped with electrically powered lathes, circular "Disston" saws,

and drills, as well as the ordinary hand tools. The lack of electrically powered tools is another reason why the chair industry does not prosper as a pure cottage craft. The first operation in making a chair frame is to cut the lumber into pieces of the appropriate sizes for the type of chair being made. There are 14 pieces to each chair: 4 rungs, 4 seat pieces, 4 legs or uprights, and 2 back pieces. The individual pieces are then planed, beveled, and perforated or slotted for fitting. After the chair is assembled it is ready to go to the home of some *entulera* for the bottom to be woven on. The amount of lumber consumed varies greatly with the sizes. There are six commonly recognized sizes which are named or numbered according to three systems. These sizes and their heights and the number of board feet employed per dozen are given in table 29.

TABLE 29—*Chair sizes*

Classifications	Over-all height (cm.)	Board feet used per dozen
No. 5, No. 4, Especial, Mesera tosca, and Silla Grande.	80–100	24 (av.).
No. 4, No. 3, Mesera, and Silla de Comedor	70–86	16–23.
No. 3, No. 2, Costurera	60–63	10–12.
No. 2, No. 1, Chamaco, Media costurera, Niño, Chica.	44–46	7–8.
No. 1, No. 0, Chiquita para niños, Niño	30–42	(?).
No. 0, No. 00, Juguete	18–23	(?).

The chair frames are picked up at the chair factory or warehouse on Monday morning, and all chairs taken out are returned by Saturday evening. By ingenious stacking 1 person can carry from 2 to 5 dozen of the 4 smallest sizes of chairs in 1 load, but it is not uncommon to see a large load spilled all over a street. From 50 to 100 women and children *entulan* the bottoms, the average number working in any week being around 68. About 8 percent of the chair weavers are boys, perhaps 40 percent are girls under 18, and the remainder are women. The ages run from 7 to 53. The 1940 census showed no individuals with the occupation of chair weaver, since the women and older girls do it in addition to their regular housework. The entrepreneur supplies both chair frames and the tule or *chuspata* (*Cyperus*) which is brought by truck from points along Lake Cuitzeo and also on burros from the Tecacho marshes and Lake Cuitzeo. The chief places of origin are Huandacareo, Iramuco, and Chucándiro. Two large armfuls (*manojos grandes*) constitute a load (*carga* or *bulto*), which is delivered to Quiroga for $18 to $20. The number of chairs that can be finished in a day varies greatly with the age, skill, and other duties of the worker, and with the size of the chair. The averages run from about a dozen a week of the largest size to a gross of the smallest, and the average income is about $1 a day.

Upon return of the chairs to the chair factories, perhaps a third are varnished and decorated by painters in paintshops or *talleres de pintura* attached to the shops. The remainder go to the homes of the painters. In addition to the score or so of painters who decorate *bateas*, chairs, and anything else to be painted, there are about 24 painters who concentrate on chairs. Normally some 30 painters are decorating chairs at any one time. The equipment and materials are about the same as for decorating *bateas*. The first operation is to apply a coating of glue or sizing (*baño de cola*), followed by an application of commercial varnish, principally of the brand known as "Brillolina." The sizing, varnishing, and drying take from 1 to 2 days. Next there are applied two coatings of already prepared paint (commonly, the brand "Piel Roja") of the desired background color—black, yellow, blue, red, green, etc. Two to four days are required for these two coatings. Finally the decorations are painted on, with the same brushes and pigments used for decorating *bateas*. The designs are small conventionalized flowers and leaves, applied to the legs, back pieces, and the seat. Often the seat will have but one large flower with stem and leaves. The more common color combinations are blue on red, red on blue, red on green, blue-red-green on yellow, and blue-red-green on black. About six dozen chairs of the most common size (*chamaco*) can be varnished, painted, and decorated in a week. This provides a net income of about $4 a day, although a few painters earn as much as $10 a day.

In the period 1943 to 1946 the monthly production varied from a high of more than 8,000 chairs of all sizes to a low of a little more than 4,000. During a 12-month period in 1944–45 nearly 100,000 chairs were exported, but by 1946 the exports had dropped to around 5,000 a month. In 1944 about 87 percent of the chairs were *chamaco*, 12 percent were *costurera*, and the other four sizes made up only 1 percent of the production and export. A change in orders from the

outside caused the percentages in 1945 to change to 63 percent *chamaco*, 25 percent *costurera*, 11 percent *juguete*, and 1 percent of the other three sizes. Six of the operators account for more than 90 percent of the output. These businesses vary considerably in organization. The largest (La Entuladora de Quiroga, S. R. L.) began as something of a cooperative, but it is now controlled by one man who is the brother of one of the leading merchants of regional handicrafts. The second largest enterprise is a partnership between the owner of the flourmill (who provides the chair frames) and a man whose sole business is arranging for the completion of the chairs (bottoms, sizing, varnishing, painting, decorating), packing, and sales. The third largest chair factory is run by two brothers who are primarily general merchants. The other important chair businesses are run by the brother of a handicrafts merchant, the son of the owner of one of the two corn-meal mills (*molinos de nixtamal*), and a young man who carries on some chair making but whose principal occupation is the storing, packing, and selling of the production of a number of other shops. When the chair industry was at its height about two freight carloads were shipped a month out of Morelia, chiefly to Los Angeles, Chicago, New York, and Mexico City. The chair business is still new and in an experimental period, and it remains to be seen if it will become a stable part of Quiroga economy. Since it is still listed as a new industry, it is not subject to taxation. Probably the making of chairs will sink to a secondary industry as soon as it becomes subject to taxation, especially in view of the fact that all of the materials must be brought in from a distance, and considering the competition afforded by chairs made in the States of Mexico, Jalisco, Guerrero, and Nayarit. It is doubtful that the local pine forests can be built up sufficiently to support large-scale production of either chairs or *bateas*, although tules of the type used for chair bottoms can be cultivated along the lake margin, and the area could become self-sufficient again in the production of oils (*chia, chicalote,* linseed) and certain pigments.

Since the *chamaco* size chair constitutes about 75 percent of all chairs produced to date in Quiroga, it may be of interest to outline some of the factors involved in its production. A typical chair of this size has an over-all height of 44 to 46 cm., the seat is 23 to 25 cm. above the floor, and the seat has a front dimension of 25 to 30 cm., and a lateral dimension of 24 to 26 cm. Approximate average costs of labor and materials per dozen chairs are: $2.56 for lumber and $3.50 for labor in making the frames; $2.00 for weaving the bottoms and $1 for the tule; $3.50 for labor and $1.50 for materials in sizing, varnishing, painting, and decorating; which total $9 for labor and $5.06 for materials per dozen chairs. This provides a grand total of $14.06, although various shops gave us estimates which ran from $11.70 to $16.40. A dozen chairs ready for packing sell for $18; and the packing runs from $3 to $4.05 per dozen. Packing varies from expensive but durable wooden crates and boxes to cheaper but poor wrappings of mats (*petates*). The average gross profit is around $4 a dozen, from which must be deducted the costs of storage space, power, and general overhead (including the time of the owners devoted to supervising, bookkeeping, sales, etc.). No figures were available on such costs. The outstanding fact is that the chair industry provides employment (full and part time) to 150 to 200 people (carpenters, seat weavers, painters, packers, truckers, etc.), and brings in $8,800 (calculated on the basis of a minimum of 4,000 chairs of different sizes) or more each month. Of this money about $5,600 is retained in Quiroga as wages and gross profits.

Although chairs and *bateas* constitute the chief items of woodwork in Quiroga, there are several others that should be mentioned. The classic decorated chests and trunks (*cajas, arcas, baules, petacas*) are no longer made, but two carpenters in one household make about six *petacas* a week (at $20 each) which are somewhat like the earlier chests. However, the chests are not made in nested form (i. e., several chests of diminishing size each of which fits into the next larger chest, and each of which has a different lock and key); they have simple locks purchased at the stores; and the decoration is inferior to that on the old chests. One old *baul* (estimated by its owner as 70–100 years old) which we examined consisted of six "nested" chests, each of which was decorated on the top and three sides. The decorations were flowers, plants, birds, and monkeys in several colors on a black *maquea*. The chests were made of pieces of pine lumber fitted with wooden nails or pegs. Several of the chair shops also make

small tables adjusted to the smaller sizes of chairs, and a miscellany of furniture ranging from toy furniture sets up to a few full-size dining-room and living-room suites. The locally made wooden earring pendants have been mentioned, in addition to which a few masks are made; and spoons, ladles, and other woodwork from Paracho are decorated by some of the *maqueadoras* and *pintores* of Quiroga. One of the handicraft merchants recently abandoned the manufacture of chairs, and concentrated on turning a variety of wooden objects such as bowls, jars, chessmen, etc. The material used is locally cut madroño and *jaboncillo* wood.

WEAVING OF WOOLENS AND COTTONS

The weaving of cotton goods was a prehistoric occupation in Michoacán, and professional weavers are mentioned in the Relación de Michoacán. Unfortunately, we do not have a satisfactory list of the items woven by the Tarascans before the coming of the Spaniards. *Mantas* (blankets) appear on the lists of tributes paid by villages of the Pátzcuaro Basin so early that probably cotton was used instead of wool for the *mantas* made before sheep raising became well established in the area. No where is there any indication that Cocupao was ever noteworthy for its weaving, but apparently weaving of items for local consumption was present throughout the colonial period—as was true of most of the other Tarascan villages. Wool soon became the only fiber used for blankets, skirts, and most sashes, while cotton provided the material for shirts, blouses, trousers, dresses, and shawls (rebozos). Spanish influence not only substituted wool in large part for cotton, and introduced a number of new forms (trousers, dresses, shawls, etc.), but also brought about a gradual replacement of the native primitive "horizontal" looms with upright looms (*telares*) and of the crude spindle and whorl with the spinning wheel (*torno de hilar*). At present in Quiroga there is no spinning or weaving with the aboriginal techniques or instruments. In fact, the entire weaving craft from type of goods produced to the guild organization seems to be European. It is of interest that the weaving guild (*gremio de tejedores* or *obrajeros*), presumably the oldest craft guild in Spain, should be one of the three still extant in Quiroga. Due to the complete lack of local records we can only assume that the weavers, along with the other guilds in the village, participated in the general decline that took place during the eighteenth century in Mexico; and after craft guilds were abolished or outlawed in 1861 the weaving guild lost all of the attributes of a craft guild and became simply a religious guild or *cofradía* which retained merely the name and membership from the craft corporation. Locally a weaver in wool is referred to as an *obrajero* and the room in his home in which is installed only one or two looms is called an *obraje*, despite the fact that less than 150 years ago only very large weaving establishments were termed *obrajes*. Formerly a small establishment, such as are all those in Quiroga, was termed a *trapiche*, but now throughout most of Mexico a *trapiche* is a small sugar mill and the associated plantation.

In 1945 there were 13 upright wooden looms, entirely of local manufacture, in 12 Quiroga homes. All of the *telares* were old; in some instances the original frame had been made by the grandfather of the present owner, although various parts had been replaced. Ten of the looms were commonly in operation. The usual equipment, in addition to the loom, included one to three spinning wheels (*tornos de hilar*), a reel (*malacate del torno* or *devanadera*), and one to three pairs of cards (*cardas*). There were 23 individuals who termed themselves *obrajeros*, as compared with 26 in the 1940 census. These *obrajeros* comprised 12 owners (*patrones*), 9 members of the family, and 2 journeymen workers (*obrajeros ambulantes*). No distinction was made among pickers, sorters, carders, spinners, dyers, weavers, fullers, etc., since usually all of the *obrajeros* participated in all of the stages of work. In some families women might assist with washing, carding, and spinning the wool, but the actual weaving was done only by males whose ages ranged from 14 to 58. The wool used was purchased from the ranchos of Quiroga and elsewhere within the general region. Prices (as of 1945) varied from $4.00 to $4.50 a kg. for dirty or unwashed wool (white, brown, and black), but the average price was $4.00. Blue and red aniline dyes are purchased from stores in Quiroga and Morelia, although some of the customers insist on indigo being used for the blue. The leading manufacture is a blanket or *cobija* (the term *serape* or *sarape* is not commonly used by the weavers), usually woven in two parts which are sewed together in such fashion as to leave an

opening for the head. This *cobija* or serape serves as overcoat, jacket, muffler, saddle pad, blanket, etc. Formerly, we were told, the leading and almost only color combination was black decorated with red. Although black-and-red serapes still predominate, other combinations are present, such as black with blue, black or brown with white, black or brown with red and white, and even blue with white. The plaid serapes worn by some of the men are imported. The typical serapes are of dark colors and coarse weaves with simple pleasing designs in red. Two or three weavers make woolen yard cloth (*sabanillas*) and simple light blanket "coats" (*gabanes*). There are two sizes of serapes recognized: a *cobija grande* (which is predominant in the cool climate of the highlands) 2½ Spanish yards in length (about 2.09 meters), and a smaller *cobija común*. It takes one man about 3 weeks to elaborate a large serape, doing all of the work from washing the wool to weaving. Normally two or three individuals working together on the different operations will turn out a large serape in one week. Skill and rapidity vary individually, and the rates run from one-third to an entire serape per man per week. The finished product is sold by finished weight if the wool is provided by the weaver, and by work-weight if the prepared wool is provided by the customer. A large serape requires from 3 to 5 kg. of wool, according to the tightness of the weave, the average being 4.5 kg. The finished serape costs from $10 to $25 a kilogram, according to the skill and reputation of the weaver and whether the wool was supplied by the customer or elaborated by the weaver. The finished serape in 1945 cost the customer in Quiroga anywhere from $45 to $125, with a mean somewhere between $50 and $70. The net gain to the average weaver was about $2.75 a day. The complete elaboration of a serape consists of: (*a*) Purchasing dirty wool, washing, drying, sorting, and carding; (*b*) preparing the yarn by spinning and dyeing; and (*c*) weaving the fabric. Unfortunately we took no notes as to the nature of fulling the fabric, if any. Probably fewer than 250 *cobijas grandes* or their equivalents are produced a year. This is not enough to supply local demand. The production of woolen cloth (in pieces 25 meters long and 20 *pulgadas*—46 to 50 cm.—wide) may amount to 30 or 40 pieces a year.

There are two cotton-weaving establishments, which employ from four to nine individuals. In 1945 there were but three weavers (*tejedores*) and one spinner (*hilandera* or *tornera*) working. One shop with three looms had been converted in part into a chair factory, and only one person was employed in weaving. The other shop contained two cloth looms (*telares de cambaya*), one belt loom (*telar de faja*), and one shawl loom (*telar de rebozo*), as well as two spinning wheels and several reels. All this equipment was wooden and was made in Quiroga. Raw materials consisted of skeins of cotton yarn and dye materials purchased in Morelia and Quiroga. The operations performed in the shop were: (*a*) Dyeing the yarn or thread the appropriate colors (red, orange, black, blue, yellow, etc.) with aniline dyes, (*b*) drying the skeins in the sun on racks in front of the shop, (*c*) running the thread onto reels, (*d*) mounting the threads in the warping frame, and (*e*) weaving the fabrics. Most of the cloth woven was a fabric termed *cambaya*, and the weavers are known as *camballeros*. These terms are reminiscent of the Indian cotton fabrics which at one time were exported from the Cambay area north of Bombay, and the local *cambaya* might be called a coarse striped muslin much like the bengal and cambaye of India. The cloth is woven in pieces 25 meters by 55 cm. One weaver can turn out one piece or roll of *cambaya* a day, or 15 small rebozos, for which he receives $2 in wages. Frequently the *camballero* will "rest" by shifting from one type of weaving to another, including belts or sashes. In Quiroga the weaving of rebozos and *fajas* is quite unimportant, and most of these articles are brought in from Paracho and other villages of the Tarascan Sierra.

Other types of weaving are practically nonexistent. There is a one-legged man who divides his time between being the town's only shoeblack (*bolero*) and weaving hats of palm fiber brought up from the *tierra caliente*. Also, there is one family of traveling salesmen (*comerciantes ambulantes*) who weave baskets and make a variety of toys while home from their selling trips. Although there is a large local demand for mats (*petates*), for many purposes— from use as sleeping mats to wrapping for chairs and furniture—all of the *petates* are purchased from weavers in Santa Fe, Tzintzuntzan, and other lake communities. The tules along the lake shore near Quiroga are on Santa Fe property, and they are harvested

periodically by the people of Santa Fe. Some fire fans of wheat straw are decorated by the painters of Quiroga, but these fans are made in the three western villages of the municipality. Practically all of the cordage and other manufactures of agave fiber are brought in from the states to the north. Hammocks are not used in Quiroga excepting for a few in some of the wealthier homes which are used for daytime relaxation.

FIREWORKS

The makers of fireworks or *coheteros* occupy a very important and honored position among the craftsmen of Quiroga. Ever since the introduction of Christianity fireworks of various types have been an indispensable part of religious festivals, and far more fireworks are used today in religious celebrations than in patriotic and other celebrations. For some years there have been but two *coheteros* in Quiroga, but these two (aided by members of their families) are able to meet the local demands. Although a variety of fireworks are made to order, the most important and most costly are the frameworks of cane and twine with attached firecrackers (*cohetes* or *bombas*). The most common shapes are towers (*castillos*) and large Catherine wheels (*ruedas grandes*). The implements used are simple, consisting of mortars, pestles, knives, and a set of shaping irons. Local canes and paper purchased in the stores provide the framework and the containers. The other materials are potassium nitrate, chlorate, sulfur, charcoal, and bitumen. The large jobs with elaborate frameworks are done on special contracts which may involve several hundred pesos. Should the fireworks "fizzle out" the maker may lose all of the contract money and even may be fined. The day by day work is the making of the individual *cohetes*. The leading *cohetero*, with the assistance of two sons, turns out about a gross and a half of firecrackers a day. These *cohetes* sell for $6 a gross, which amounts to a net income of between $3 and $4 a day for the family. When not engaged in making fireworks they make blankets.

BLACKSMITHS AND TINSMITHS

There are four blacksmiths (*herreros*) who work in two home smithies; and there are two tinsmiths (*hojalateros*) each with his own home shop. In the previous century there were a number of smithies, and there was a street of blacksmiths, but the great reduction in the packing business (*arriería*) together with greater availability and cheapness of iron and steel goods manufactured elsewhere in Mexico, or imported from Europe and the United States, has greatly reduced the variety and number of items elaborated by the smiths of Quiroga. Although they can and will make almost anything from a machete or a plowpoint to an iron grill or a heavy chain, most of their work is confined to making small and simple items used by farmers, such as mattocks, axes, plowpoints, sickles, gads, shoes for equines, etc. The equipment is such as could be found in a rural smithy in the United States a couple of generations ago. Nearly all of the adzes, drawshaves, plane blades, locks and keys, bits, saws, hammers, and most of the other iron and steel items in common use come from Mexico City or Monterrey; pocket and belt knives are principally European; and most of the machetes come from Guerrero and Connecticut. Although there is a tradition that the original bells of the parish church were cast in Quiroga, the present bells came from outside of the State. Most of the protective and ornamental bars and grills (*rejas*) were purchased in Morelia, and probably were made in the State of Puebla or in Mexico City. Other than for the equipping of the pack trains there never was an ironworking tradition in Quiroga. However, only one of the Tarascan villages (San Felipe de los Herreros) ever had such a tradition, and even there the quantity and quality of the ironwork is low. Villa Escalante (Santa Clara de los Cobres) supplies the copperware in use in Quiroga. The two tinsmiths do not work consistently at their trade, and their production of candleholders, frames, trays, lanterns, etc., is quite small. They use both commercial tinsheet and the material in "tin cans." Quite definitely Quiroga is not much of a user of items of metal other than in the woodworking occupations and in some of the farming implements. Leather and cordage replace chains and nails, stone and wood are the common fence materials, items of stone, and wood and terra cotta dominate the kitchens, etc.

SKIN AND LEATHER WORKING

Although the curing of skins and the working of leather were *oficios* given in early colonial days to the neighboring village of Teremendo, there

has been leather working in Quiroga from the earliest times on record. At present there are 28 shoemakers and cobblers (*zapateros*), 14 tanners (*curtidores*), and 3 harness makers and saddlers (*talabarteros*). There are six tanyards (*tenerías*), four of which are in the homes of the proprietors, and all of which are in the western part of *cuarteles* I and II near springs and piped water. The equipment varies from tannery to tannery, but the essentials consist of a supply of water, several vats, a number of wooden horses or tanner's beams, an assortment of knives (fleshers, scrapers, curriers, trimmers), and smoothing irons (instead of rollers). More than three-fourths of the prime materials are oxhides fresh from the slaughterhouse which sell for an average of $1.60 a kilogram. The average oxhide, moist and smeared with blood and dirt, weighs about 30 kg. and costs $45 to $50. Possibly sheepskins rank second, and these are purchased at from $3.50 to $5 apiece. A few horsehides are tanned, and also some skins of pigs, goats, and an occasional wild animal (deer, raccoon, fox, wildcat, etc.). Most of the tanners use vegetable tannins, principally *cascalote* (*Caesalpinia coriaria* (Jacq.) Willd.) from the *tierra caliente* at 80¢ a kilogram, and *timben* or *raicilla* (mentioned previously) at $2 an *arroba*. A few tanners use potassium dichromate and other chromium compounds, which are expensive ($20–$27 a kilogram) but which reduce the tanning time by at least one-third. Other materials include lime, dyestuffs (black, yellow, and brown), and dog dung. The first operation is to wash and soak the hides in limewater, which loosens the hair and the scarfskin, plumps the true skin, and neutralizes the fats. Next, the hides are placed on the horses or beams and hair and scarfskin are scraped and shaved off the hair side and the fatty compounds and flesh are removed from the inside. Then the lime remaining in the hides is removed or neutralized by soaking the hides in water in which dog dung has been dissolved. Finally the hides are placed in the tanning solution, where they are left for about a month if vegetable tannins have been used. We cannot describe the dyeing process (which is done simultaneously with the tanning) because the hides in Quiroga are not commonly dyed, and we did not see the process. The principal uses of Quiroga leather are for sole leather, thongs, belts, and some uppers. Some of the tanners do their own splitting and currying, but many of the tanned hides and skins are sold in that form to the *zapateros* and *talabarteros*. The entire *cueros* are sold at $4.50 to $4.80 a kilogram of tanned leather. It is claimed that a green hide of 30 kg. will yield 16 kg. of leather. This would amount to an income (after deducting for the cost of the green hide) of about $28.80 per tanned hide, from which must be deducted the cost of water, tannins, lime, etc. We were unable to obtain satisfactory figures for these costs. The average tanner can complete 8 to 12 hides each month. We would hazard a net return for labor of about $4 or $5 a day. However, the total number of oxen slaughtered in the municipality each year is not sufficient to keep all of the tanners working at capacity, and there is relatively little purchase of hides from neighboring municipalities.

With the decline of *arriería* there has been a great decline in the number of *talabarteros*, and at present there are only three who claim this occupation. Actually, only one maintains a formal shop or *talabartería* in his home, and the other two do only occasional jobs where the leather is provided by the customer for some specific manufacture. Equipment consists of awls, knives, punches, sharpening steel, wedge, rule, compass, triangle, hammers, mallet, and wooden vise or form. Materials embrace leather of various weights and quality purchased in Quiroga and Morelia, thongs, *pita* (*Agave*) cordage, and buckles. Various types of belts and straps constitute the bulk of the present manufacture. Mending riding saddles, making men's belts which cost $1 in materials and sell for $2, and retailing a variety of leather goods constitute the business of the leading *talabartero*. The others make occasional sets of harness to order. The equipment for pack animals (*jato*) comprises cinches, martingales, back straps, blinkers, saddle or packing pads, crude packing trees, etc. The exact number of these items varies with the customer, his pocketbook, and his occupation. *Arrieros* who drive burros and mules on long trips over rough roads are the most exacting in their requirements. The set of harness (*aparejo*) used locally on burros can be made in 5 or 6 days, and costs the leather and *pita* involved plus $3 a day wages. On some sets there is almost more agave fiber used than leather.

The 28 shoemakers, cobblers, and makers of leather sandals (*huaraches*) work in 16 shops, all

but 4 of which are in the homes of the proprietors. The number of workers, including the proprietor or *patrón*, varies from 1 to 4. There is very little shoemaking, and most of the work is repairing shoes and sandals. Several shops concentrate on making sandals and these are known as *huaracherías*. The equipment is very simple and is restricted to metal and wooden lasts and forms and hand tools such as awls, knives, and hammers. A few shoemakers have sewing machines. The majority of the shoes and probably a large part of the *huaraches* in Quiroga are brought in from Mexico City, Guanajuato, Jalisco, and other towns in Michoacán.

TAILORS AND DRESSMAKERS

There are eight tailors who work in five shops or *sastrerías* which are installed in the front rooms of the homes of the proprietors. They make a variety of clothing for males, repair clothing, and do cleaning (removal of spots) and pressing. When a suit, or overcoat, or some shirts are made, commonly the customer supplies the cloth, which may be purchased in Quiroga or Morelia, and probably was made in Guanajuato, Querétaro, the Distrito Federal, Puebla, or Veracruz. The basic equipment consists of hand and pedal sewing machines, irons heated with charcoal, and an assortment of shears, scissors, needles, and tape. Most of the articles of female dress (other than the rebozos and *fajas* worn by the poorer women, and the fine shawls or mantillas and stockings worn by a minority) are made in the home. In the town of Quiroga there are 107 hand and 87 pedal sewing machines, or about one sewing machine for every three households. In addition to skirts, blouses, dresses, and undergarments for the female members of the family, a large proportion of the work trousers, shirts, and underwear of the males are also made in the home. Women who do not own sewing machines commonly borrow or rent from their neighbors. Some housewives do occasional sewing for others. However, there were five professional dressmakers or *modistas*, two seamstresses, and an uncertain number of women and girls who would go out to others' homes to sew.

The above categories practically exhaust the list of cottage crafts. Although nearly all of the baking is done in home establishments, this and other forms of food elaboration have been grouped together for discussion. Since Quiroga is nearly surrounded by important pottery-making communities (Santa Fe, Capula, and Tzintzuntzan) not a bit of pottery is made locally, although some of the pottery made in Santa Fe is decorated by Quiroga painters. The total picture of cottage crafts in Quiroga is somewhat inconsistent. Only in the wood industries (chairs, *bateas*, and turned objects) is there a constant surplus for export. A number of crafts exist which only partially supply the local needs (e. g., weaving, blacksmithing, and leatherworking). In a few fields there is still dependence on communities which have specialized in certain commodities since colonial times (e. g., metates and manos from San Nicolás, musical instruments and chocolate beaters from Paracho, etc.). However, the improvement of communications and the development of large and diversified industries in such cities as Mexico, León, Guadalajara, etc., have combined to bring about a general reduction in most cottage crafts. This trend probably will continue in Quiroga until there will be left practically no true cottage crafts. Making of wooden items for tourists will become more and more concentrated in central shops, while such crafts as weaving and leatherworking will disappear completely, shoemakers will be simply cobblers, tailors will be principally menders, cleaners, and pressers of clothes, and blacksmiths will do little more than shoe equines, etc.

FOOD PROCESSING

Other than the milling of wheat flour and the grinding of maize, the chief form of food processing is the baking of breadstuffs from wheat flour. There are 25 bakers or *panaderos*, including one *repostero* or maker of tarts, cookies, and other sweet confections. These 25 bakers work in 13 bakeries or *panaderías*, all but 2 of which are in the homes of the master bakers. There is 1 large bakery, 7 of middle size, and 5 small ones. Each bakery has 1 or 2 *hornos* or Spanish bake ovens, about 4 meters in diameter and 1.30 meter in height, which are located in the yard or patio. The dough is mixed in wooden bowls and a large wooden trough (*artesa* or *canoa*). Other equipment included poles and long spatulas or paddles (*hojas*), flour boards, baskets, and mantles. The regular bakeries made small crusty French rolls, smooth floured circular breads something like a large biscuit in appearance, roundish breads glazed and encrusted with white

and with brown sugar, and sweetened breads in a variety of forms which went by such fanciful names as *espinazos, gendarmes, conchas, cuernos*, etc. The materials used daily in the larger bakeries consisted of one 44-kg. sack of locally milled wheat flour, 3.5 kg. of lard, 10 kg. of white sugar, 5 kg. of *piloncillo* or brown sugar, 250 gm. of bicarbonate of soda, and 250 gm. of table salt. No eggs were used in the bakeries excepting in the one *repostería*. The smaller bakeries sold their products directly to customers, while the larger establishments hired boys and men to deliver their output to the stores in Quiroga and to the ranchos. For delivery the baked goods (colloquially known as *fruta del horno;* i. e., fruit of the oven) are placed in a large basket which is covered with a cloth and then is carried on the head. In 1945 practically all of the baked goods, whether plain rolls or sugared buns, sold for 5¢ to 10¢ apiece. We were unable to obtain figures on wages and other costs, nor could we find out the actual production of the different bakeries. Consequently we cannot evaluate the baking industry. It is certain, however, that the production and consumption of wheat breadstuffs is increasing in Quiroga. Although the *gremio de panaderos* is extinct as a craft guild, it is still organized for religious purposes. Furthermore, the bakers were sufficiently well organized along economic lines that in June of 1945 they carried out the first strike in the history of Quiroga. This 3-day strike (refusal to bake for the community) was in protest against the high price of sugar, and closely followed the first modern attempt at price control in Michoacán (the publication on June 11, 1945, by the State government, of a list of maximum prices for various commodities).

FLOUR MILLING

The single largest industrial establishment in Quiroga is in the hands of the Torres family. This establishment consists of the only wheat mill in the municipality, one of the two *molinos de nixtamal* in Quiroga, one of the three largest chair factories, and the local office for the electricity which is brought in from the Bartolinas plant near Tacámbaro. The wheat mill and the *molino de nixtamal* are the most important food-processing establishments in the northern part of the Pátzcuaro Basin. The wheat mill contains one Midget Marven mill of 4 pairs of cylinders (6 by 20 inches) with a capacity of 40 barrels (of 88 kg. each) every 24 hours; 1 cleaning machine and 2 machines for further cleaning and polishing the wheat kernels; 1 Great Western *banco* with 2 pairs of cylinders (6 by 16 inches); 1 Todd Improved *torno*; 1 mixer; 1 Mitchell blancher; 1 Jewel packer; and 1 Koerting motor with pulleys, belts, and other accessories. Although estimates of production are often made in barrels, all of the flour produced is sold in bags of 10 kg. and 44 kg. The bags are purchased from a company in Puebla, and carry the trademark of the local mill "El Luchador." The wheat milled is mainly from the municipalities of Quiroga and Tzintzuntzan, although some comes in from other municipalities. In 1944 and 1945 some wheat was imported from the United States. The mill in Quiroga has to compete with mills in Chapultepec, Pátzcuaro, Tacámbaro, Morelia, Villa Jiménez, and elsewhere in northern Michoacán. Nearly all of the wheat milled is the general type known locally as *trigo colorado*. The mill operates two 8-hour shifts a day, and produces about 50 sacks of 44 kg. or the equivalent of 25 barrels of flour a day. Approximately 12,000 sacks, or 528,000 kg. of flour, are milled each year, since the mill operates about 240 days each year (25 days a month for 9.5 months of the year). Apparently it takes from 120 to 130 kg. of wheat to make 44 kg. of flour. In 1945 the mill purchased local wheat for $56.50 a *carga* of 161 kg., and imported wheat from the United States at $62 a *carga*. The chief markets are in the municipality of Quiroga and in Morelia. However, wheat flour from the Santa Lucia mill in Morelia also is sold in Quiroga. In 1945 a 44-kg. sack of flour wholesaled in Quiroga for $23; in 1944 the price was $18 to $20; and before the war the wholesale price was between $10 and $15. The local merchants retailed this flour at 55¢ to 60¢ a kg. for a gross profit of 2.7¢ to 7.7¢ per kg.

MOLINOS DE NIXTAMAL

The Torres establishment contains the leading *molino de nixtamal* which is powered by electricity and grinds about 750 kg. a day of dough or *masa*. The Fuentes *molino de nixtamal*, with two grinders, is powered by a 30-hp. engine (fueled by *gas pobre* produced from charcoal) and grinds about 400 kg. of *masa* a day. The combined production of 1,150 kilos of *masa* probably represents between 40 and 45 percent of the *masa* ground each day in Quiroga. The remainder is ground principally

on the metate since nearly every one who can afford it takes her *nixtamal* (prepared maize) to the mill, and those who cannot afford to pay the milling charge of 2¢ a kilo of *masa* usually cannot afford to purchase a handmill. There are very few handmills in Quiroga as compared with the ranchos where there are no *molinos de nixtamal* even for those who could afford to have their *nixtamal* ground. Those who cannot afford to pay the milling charges make a virtue of necessity and claim that tortillas made from *masa* ground in the mills have an inferior flavor to those prepared from *masa* ground on a metate. Some men even go so far as to claim that they can distinguish between tortillas prepared in their homes and tortillas made by other women. Possibly there is some truth to these claims. At any rate, in many communities where *molinos de nixtamal* exist, there are a number of families who could afford to patronize the mills but who do not do so. Furthermore, many young brides do not dare patronize the *molino* until they have proved to their husbands that they are adept with the metate and mano. However, there is less of this in Quiroga than in most Michoacán communities since the first *molino de nixtamal* (powered by a steam engine) was established in 1906. This was one of the first in Michoacán. The present Torres mill grew out of one that was established in 1909 (run by *gas pobre*). A few of the well-to-do families who like their tortillas but who do not like the *masa* produced by the mills hire women (*molenderas*) to come in daily and grind on metates. There are eight of such women in Quiroga who charge the equivalent of about 3.2¢ a kilo of *masa*.

The mills are termed *molinos de nixtamal* because they do not grind dry maize but a specially prepared form known as *nixtamal*. In the evening a woman will select as much dry shelled maize as is needed for the next day's tortillas. In a family of four or five individuals who eat no wheat bread this will amount to 3 to 8 liters. The kernels are rinsed and placed in a special *olla*, enough water is poured in to cover the maize, and lime is added. The amount of lime used varies with the individual. It is this lime, or rather the wood-ash lye which formerly was used, which gives rise to the name. In the Mexicano language *nextli* is ash and the ash or lye water in which the maize is placed is termed *nexatle*. The Tarascan terminology is nearly the same and *nixtamal* becomes *apu*, from *apo* (ash). The *olla* (*nixcomil*) with the limewater and maize is placed on the fire where it remains from 15 minutes to ½ hour, being constantly watched and stirred so that the water does not boil. Boiling is thought to give an unpleasant taste. When testing shows that the shell or outer skin of the maize will come off easily, the *olla* is removed from the fire, enough hot water is added to completely cover the plumped or swollen maize, and it is allowed to stand overnight. The next morning the maize kernels are rinsed several times to remove most of the lime, and then the *nixtamal* is ready for grinding. It is commonly computed that 1 liter or 0.7 kg. of ordinary dry maize (neither recently harvested nor quite dry and attacked by arthropods) will produce 1.25 kilo of *masa* or *tzirere*. Even though the *masa* is run through the mill a second time most housewives give it a third grinding at home to remove all lumps. Then it is ready to be patted into tortillas (the Mexicano is *tlaxcal*, and the Tarascan is *curinda*) and cooked on the terra-cotta or metal sheet (*comal* or *erox*) which is placed over the fire. The diameter, thickness, and weight of the tortilla depend on the tastes and wealth of the family. One liter of dry maize or 1.25 kilo of *masa* will produce from 8 to 42 tortillas which weigh from 200 gm. down to 33.5 gm. each. For domestic use the tortillas commonly range from 5 to 8 inches in diameter and weigh between 34 and 42 gm. The professional tortilla makers (*tortilleras*) who sell tortillas at the cooked-food booths or *puestos* usually get 42 thin tortillas from a liter of maize, and these tortillas were selling at 3 for 5¢ in 1945. During most of 1945 maize sold for $21 a *fanega* (*hectólitro* or 100 liters), 90¢ a *cuarterón* of 4 liters, and 22¢ to 23¢ a liter.

BUTCHERING

Next in importance after the breadstuff industries are the slaughtering of livestock and the selling of meats. As has been mentioned earlier, all oxen are slaughtered in the municipal *abasto* or *rastro* under strict fiscal inspection. The sanitary inspection required by law is restricted to the rejection of only the most obviously diseased

cattle. Approximately 250 to 350 oxen, and 350 to 450 hogs are slaughtered annually. Practically no calves are killed, and the comparatively few sheep and goats consumed in Quiroga are slaughtered in the ranchos. There are eight slaughterers (*matanceros, matarifes, matachines*) who are hired to kill, skin, clean, and dismember the animals. Sometimes the man who raised the animal will pay all the *abasto* charges and the wages of the *matancero*, in which case he disposes of the hide to a *curtidor* and sells the meats to the butchers. More often one or more of the butchers will acquire title to the live animal and take care of all expenses of slaughter. A butchered ox normally yields a hide, head, four "quarters," two sides (the thorax is split down the backbone), tongue, heart, lungs, liver, and (if a male) penis which is converted into a whip or quirt. The stomach and occasionally part of the intestines are cleaned and converted into tripe (*menudo, tripa*). Normally no use is made of the blood and intestines. After the slaughtered animal has been dismembered and the parts have been washed superficially at the *abasto*, the larger pieces are impaled on hooks in a specially made saddletree on the back of a horse and are thus conveyed to the butcher shops. There are four butcher shops or *carnicerías*, one in each quarter of town, and there are four butchers (*carniceros, tablajeros*). Since animals are not slaughtered every day and meat is not always available the butchers hang out a small red flag whenever there is meat for sale. The meat moves rapidly so there is little attempt made to protect the meat either from flies or from heat. The science of butchering is practically nonexistent, and the butcher whacks off pieces at the request of the customer with little concern for the grain or for "cuts of meat" as they are known in the United States. Pure flesh and fat with no bones (*pulpa*) and meat cut from the loin or chine (*lomo*) sold in 1945 for $2.50 a kilo. When we first did field work in Mexico some 20 years ago one could buy the best *pulpa* for 50¢ a kilo. The other miscellaneous meats (*cocido*) sold for $2 a kilo in 1945. Pork sold for $3 a kilo excepting for the rib and backbone meats (*espinazo*), which sold for $1.80 a kilo. When mutton (*carnero*) was available it sold for $2 a kilo. We did not see the killing and preparing of hogs and sheep, but from the pork that we ate it was evident that the technique for removing bristles was not very effective.

DRINKS AND CONFECTIONERY

Tne next most important "food" industry is the preparing of drinks, ices, sweetmeats, and candies. The small-scale preparation of *pulque* has been discussed previously. Until some time between 1918 and 1924 the manufacture of rum and *mescal* was quite important. At present no alcoholic beverages are made locally excepting a little *pulque*. Rum and *mescal* are imported from Uruapan, the *tierra caliente* of Michoacán and Guerrero, and from Jalisco. Modern European type beer has become quite popular in recent years, and large quantities are imported (in bottles) from Mexico City, as well as from some of the other brewing centers in Guadalajara, Orizaba, Monterrey, etc. The former *mescal* production, although controlled by a resident of Quiroga, came chiefly from the Hacienda Sanabria between Tzintzuntzan and Pátzcuaro. During the latter part of the nineteenth century and up to the Madero Revolution Quiroga was famous within Michoacán for its *aguardiente* (rum) made from brown sugar *piloncillo* and from the *sobrón* or molasses residue left from the making of *piloncillo*. These raw materials were brought to Quiroga chiefly from the *tierra caliente* to the south. Quiroga developed the *aguardiente* industry because of the reputation of the waters of some of its springs. During much of the Porfirio Díaz period there were two factories in Quiroga proper (one in *cuartel* I, and one near the springs of La Tepóricua), one in Caríngaro, and one in Sanambo. Three of these factories have given rise to the local place name *La Fábrica*. At present there are two small plants for making and bottling carbonated flavored and sweetened drinks (*refrescos, aguas gaseosas*). The favored flavors are lemon, lime, orange, peach, and strawberry in approximately that order. There is a local Coca-Cola concession, and this drink has gained some currency in Quiroga as it has throughout Mexico during the last 15 or 20 years. There are several women who prepare hot drinks for public sale on street corners and in the plazas in the early morning and at night. The most popular of these drinks are thin sweetened and flavored gruels known as *atoles*, coffee, and chocolate. There are two shops for making ice cream, sherbets, and other frozen confections. These two *neverías* or *paleterías* are equipped with electric freezers. Their products

are sold in the shops, by streethawkers, and by men who visit the ranchos and other nearby communities. Instead of the ice cream cone the favorite product is the *paleta* which is a block of mediocre ice cream frozen around a stick. There is one large *fábrica de dulces* or sweetmeat shop, housed in a private home, which hires up to 17 workers. Its chief products are sweetened fruit pastes or *ates* and sweetened ground parched maize (*pinole*). Occasionally candied pumpkins, squashes, and sweetpotatoes are made in several homes and are sold to stores or are vended in the streets. Most of the candy consumed in Quiroga is hard sugar candy purchased in the stores. Chocolate candies are practically unknown. There is nothing in Quiroga like a soda fountain, confectionery store, or milk bar.

BUILDING TRADES

ADOBE MAKERS

The building trades in Quiroga comprise the adobe makers (*adoberos*), masons (*albañiles*), tile and brick makers (*tejeros* or *alfareros* as they are sometimes called improperly), and carpenters (*carpinteros*). As was mentioned previously, carpenters are relatively unimportant in a community where most of the structures are of adobe, tile, and stone. They may be called on for the doors, windows (if any), and the wooden framework of the roofs, but quite often all of these wooden elements are elaborated by noncarpenters. Of greatest importance are the *adoberos*, but the technique for making adobes is so simple that practically every man who erects a house can make his own adobes. In our census of 1945 there were only four men who termed themselves *adoberos*, to which should be added a variable number of the day laborers who are hired to make adobes when the occasion demands more adobes than the house builder can make himself or purchase. Incidentally, there are no house builders as such. Whenever a man wants to build a structure he either does all the work himself (aided by members of his family), or hires day laborers, adobe makers, masons, et al. Several details concerning adobes have been given previously in the discussion of Quiroga houses (pp. 48–49). As mentioned before, the adobes commonly are made in the *solar* where the house is to be erected. If high-quality adobes are wanted a master *adobero* is hired at $3 or $4 a day, and two or three day laborers at $2.50 a day. A *maestro* and three *peones* can turn out 250 adobes a day if water and the straw binder are available at hand. When all materials are provided the adobes cost from $40 to $50 a thousand; but seasoned adobes packed into a house site have an over-all cost of $70 to $80 a thousand. The implements consist of open frames or forms (*adoberas*) of the proper sizes, shovels, mattocks, and a four-handled table or panel of wood (*burra de madera*) upon which the mud is carried from the mixing pit to the forms. Wheelbarrows are not used. The outside dimensions of the most commonly used *adobera* are described as three *cuartas* by one *cuarta* and a *sesma* by 12 cm. A *cuarta* is the span of the open hand from thumb to little finger, and a *sesma* is the width of a hand with the fingers held together.

MASONS

There are 28 masons and bricklayers who are divided into the grades of master mason (*albañil maestro*), "half-mason" (*medio albañil* or *media cuchara*), and worker (*peón*). There have been no stonecutters or *canteros* for years, and whenever a stonecutter is needed he must be brought in from Morelia. The bulk of the work consists of laying out the stone foundations for houses and in bricklaying. A strong religious guild of masons existed until 1910. This guild took care of the expenses of a religious festival on the 15th or 28th of May of each year, and commonly spent about $100 for the masses, fireworks, music, etc. The guild was run by a directive committee consisting of a manager (*empresario*), secretary, and treasurer. In 1922 or 1923 the local parish priest founded an "Association of Catholic Workers," but a number of the constituent groups, including the masons, withdrew after a time because (so some of the masons informed us) the priest used the common funds or contributions to aid only his favorites. About 1942 the masons ceased to undertake the religious and other expenses of some day in May. During the latter period of highway building through Quiroga (1939–42), when buildings demolished to widen the highway were replaced with brick fronts, a syndicate of masons and bricklayers was formed to regulate such matters as wages, hours of labor, and who should be employed. It is largely due to the demand for workers in 1939–42 that there are so many *albañiles* in Quiroga at present. There

is not enough work to go around, and most of them engage in other part-time occupations such as chair making and farming. Current wages in 1945 were $4 a day for a *maestro*, $2.75 to $3 for a *media cuchara*, and $2.50 for a *peón*. Standard equipment includes a trowel (*cuchara*), hammer, plummet, level, square, rule, cord, chalk, brush, a container for mixing mortar (*mezclera*), ladder, and scaffolding (*andamios*).

TILE MAKERS

Since nearly all of the buildings are roofed with curved tiles, and because replacements are needed as well as tiles for new buildings, the making of tiles (*tejas*) is an important industry. There are five tile works (*tejería*, *tejera*, *tejar*), all of them in *cuartel* II in the northwestern sector of town where there is a combination of appropriate clays and ample water supply. All of the *tejerías* are small one- to three-man establishments excepting one which employs up to six professional *tejeros* and two *peones*. There are five master *tejeros*, three apprentices, and eight journeymen tile makers in Quiroga. If working on wages the apprentices earn $1 a day, the journeymen $1.50, and the master operators $2 a day. However, they often work by the piece, which seems to figure out about the same as day wages. A *tejería* consists of the piece of ground out of which the clay or earth is dug, an open shed or roof to provide shade, a drying yard, and one or two ovens or kilns. The ovens (*hornos*) vary considerably in size, but most of them seem to have a content of from 900 to 1,200 tiles at one firing. The tools include shovels, picks, cudgel, two-man screen with handles, water cans or buckets, rasps, iron tile mold (*gradilla*), wooden forms (*burros de madera* or *moldes*) upon which to place the freshly made tile, a strickle (*rasero*), and tables. The first steps in making tile are to dig up the clay with pick and shovel, dry the clay clods in the sun, pulverize the clods with a cudgel, screen the earth to remove sticks and stones, and mix the clay with water and burro dung. The mixing is done in a pit by men who tread the mixture with bare feet. The mixed clay is applied by hand to the *gradilla;* excess mud is removed with the *rasero*. The shaped tile is smoothed by hands dipped in water, and then the tile is placed in the drying yard to dry for 2 to 4 days in the sun. When the tiles have dried sufficiently irregularities left by the mold are rasped off, and the kiln is loaded with the tiles and pine wood (at about $5 a charge). The firing takes one day and is normally done on Friday or Saturday. One unit of operators (one to three persons) usually turns out about 1,000 tiles and a variable number of other terra-cotta products in a week. It is evident that the tile-making industry accomplishes most of its work during the dry season, and the rest of the year the *tejeros* work sporadically at tile making and at other occupations. The 47-cm. tile (which sells for $30 to $35 a thousand) is the chief product, but other sizes are made occasionally. Usually several other terra-cotta goods are made and fired together with the tiles. The most important of these are square brick (*ladrillo*) 20×20 cm., square tile (*baldosa*) 25×25 cm., and a thin oblong brick or tile (*tabique*) 28×14×5 cm. There is some manufacture of eccentrically shaped pieces (*citarillas*) for balustrades, small stoves or furnaces for the cooking hearths (*hornillas para fogones*), flowerpots, tubing, etc.

To complete the list of constructive trades we should mention the one "plumber" and two electricians in Quiroga. However, none of these has much to do with building construction or equipment. The "plumber" makes practically no installations, and his chief job is to look after the terra-cotta conduits and metal pipes which constitute the town's water-supply system. In the last few years there have been very few electrical installations, and when these are made they usually consist of running wire from the nearest post that carries a live wire to the house or building and carrying the wire on the surface of floor, wall, or ceiling to the point or points where outlets are desired. All of the outlets are for electric lights excepting in the few mills and shops which use electric power.

CANDLE AND SOAP MAKING

Among the minor manufactures only the making of candles and soap are worthy of mention. Candles have been of great importance ever since the coming of the Spaniards and Christianity. Although formerly the predominant source of illumination, along with *ocote* torches, candles are now little used for domestic illumination, and the chief use is religious. The annual consumption of candles in the church and in the household shrines must be enormous, but we were unable to

obtain adequate figures. In addition to the local manufacture in two shops, a very large number are brought in from Santa Fe, and especially large or fine candles come from Morelia and elsewhere in the Republic. Candles of paraffin and of beeswax and paraffin are made in quarters attached to the stores of two Quiroga merchants. Candlemaking is a part-time occupation filled by several men and women, but no person describes himself as a candlemaker by profession. The beeswax (*cera*) is purchased chiefly from ranchos to the north—Icuácato, Sajo, and Tzintzimacato—where there are some families (in the two last-named ranchos) which raise only bees and have up to 400 hives. There is a slight production of wax in Quiroga and the nearby ranchos. The beeswax is purchased in cakes or "cheeses" which vary from gray to blackish in color although yellow is the most common color. The color of the wax depends on the nature ot the bee pasture. Unbleached wax cost $6.25 to $6.50 a kilo in 1945. Candles are made of both bleached and unbleached wax. The bleaching process consists of melting the beeswax, pouring it onto shallow containers where thin sheets or shells are formed, and exposing the sheets to the sun for a day or longer if necessary to obtain the desired whiteness. Although some candles of pure beeswax are made, they are more expensive than those of paraffin. Probably a majority of the candles made are of pure paraffin, and next would come candles of mixed paraffin and beeswax. We were unable to find out what proportions were used. Paraffin is purchased from local retail merchants at $2.50 a kilo, as are the cotton wicks or *mechas*. Most of the candles made locally are for domestic illumination. These candles weigh 50 gm. and sell for 20¢. In one shop the slow dip (many successive dips) method is used, and in the other shop the rapid immersion method is used. There is no molding of candles. Probably not more than 300 kilos of candles are made a year in Quiroga.

A poor semiliquid soap known as *lejía* is commonly made in the patios of four Quiroga stores, and sporadically in other stores. Enough is made to supply the local demand for this soap, but all other soaps are imported. The *lejía* is commonly used for the first soaping of clothes. The frequency of manufacture seems to depend upon the rate at which each merchant accumulates tallow and crackling scraps by trade and purchase. The local tallow (*sebo*) costs $1.80 a kilo; the cost of imported American caustic soda (*sosa*) was not ascertained. The fats (50 parts by weight), alkalies (15 parts), and water (200 parts) are placed in a cauldron and boiled, then the saponaceous mixture is put into kerosene cans which hold about 18 kilos each. The semisolidified grayish mixture with various impurities is ladled or scooped out of the cans and retails at 30¢ a kilo. The chief producer makes about 720 kilos of *lejía* a month. Formerly bar soap was made in Quiroga, but now it is brought in from Morelia, Toluca, Guadalajara, Gómez Palacio, etc. Also formerly there were establishments which expressed oil from local linseed and *chicalote* seed, and there was a little manufacture of castor oil.

MISCELLANEOUS SERVICES

There is a large amorphous "labor pool" comprising 145 individuals without special skills who term themselves manual or day laborers. These persons go by such names as *jornaleros*, *trabajadores*, *labradores*, *braceros*, and *peones*. The majority (122) earn most of their income from farm labor and have been listed already under agriculture. However, these agricultural workers turn to many other forms of employment when farm work is not available. Such individuals, together with the 28 nonspecialized *jornaleros*, may be found cutting firewood, carrying water, making adobes, and tile, performing simple tasks in the chair factories and the mills, doing road work, etc. They have not been included in the numbers given for the various trades and occupations since they have no specialized skills and neither consider themselves nor are considered to be anything other than day laborers. Out of their numbers come the individuals who may act as male servants or men-of-all-work (*mozos*) in some of the stores and homes. However the regular occupation of male servant does not exist in Quiroga. It is somewhat different with the women. There have been mentioned already the women who go to homes to grind *nixtamal* and to sew. In addition, there are 31 women whose occupation is house servant (*criada*, *sirvienta*), of which number about half live in the homes in which they work. These women may be used for anything from house cleaning and washing clothes to grinding *nixtamal* and cooking. Since a number of these women are employed in the hotels and

restaurants, it is evident that very few Quiroga families can afford the luxury of domestic help. Actually there are 21 households which employ *criadas*, and a number of these servants are young girls less than 15 years old. Only four women gave their occupation as washerwoman (*lavandera*). Possibly this number is correct for those whose only income is from washing clothes, but there are a number of housewives who occasionally "take in washing." As there is no public laundry or laundry-place in Quiroga most of the women do the family wash themselves and at some nearby spring or stream. Only a few families possess tubs and washboards. If the washing is done by a *lavandera*, the normal charge is $1 for a day's work plus the cost of the soap.

We have already mentioned the one bootblack (a cripple or *cojo*) in Quiroga who divides his time between shining shoes and boots and making palm-fiber hats. There are but four professional watercarriers (*aguadores*) in Quiroga, although many others carry water for hire on occasion. However, the bulk of the water consumed in the homes of Quiroga is carried in water jars or *ollas* by women and girls from the nearest public fountain or faucet. The *aguadores* employ a *maroma*, which consists of two kerosene cans (*latas* or *botes*) suspended by cord from each end of a pole which is balanced over one or both shoulders. The water is carried at 5¢ a *bote* or 10¢ a trip. There are no beauty parlors (*salones de belleza*) for the women of Quiroga, but for the men there are 8 barber shops (*peluquerías*) attended by 12 barbers. Actually only 4 of the shops are full-fledged barber shops with mirrors and barber chairs (slightly antiquated), and the others are little more than a box or kitchen chair in the front room or yard of some house. Many of the barbers combine barbering with other professions such as shoe mending, tailoring, and farming, and but 5 or 6 are strictly barbers.

PROFESSIONS

Under this heading we have lumped a somewhat incongruous group of occupations ranging from beggar to physician. In 1945 there were but two professional beggars (*limosneras*) in Quiroga, and other than these two poor old women we saw no beggars or begging. This speaks very highly for the industry and self-respect of the people of the area. The two *limosneras* had no relatives and were too old to earn a living in any other fashion. There were two photograph shops (*fotografías*) and two *fotógrafos* who earned most of their living in other pursuits—one as a carpenter and school teacher and the other as a tailor. There were two drug stores (*boticas*), one kept by a physician and his wife, and the other by a *boticaria* who apparently had a license or degree in pharmacy. The physician's shop carried a small assortment of the medicines that were most in demand or which he most commonly prescribed, and the other shop had a larger array of patented medicines and the materials for some simple compounds. The more common types of medicines were laxatives and purgatives, "painkillers," and a number of specific medicines for diseases of the digestive tract. There is but one permanent physician (with degree from the Military Medical School in Mexico City) who first came to Quiroga in 1939–41 as chief of the local *ejidal* medical service, and who returned in 1944 to take up private practice. In addition, during the past few years there has been one or another physician assigned to Quiroga in connection with the Social Medical Service (Servicio Médico Social). Two women (including the physician's wife) term themselves midwives (*parteras*), but several other women also serve as midwives on occasion. One man and one woman (both quite old) were well known as herb doctors (*curanderos*), and we were told that there were two or three others in Quiroga.

The church is represented by the parish priest (*cura, párroco*), appointed by the Archbishop of Morelia, and the sacristan. However, there is a religious school with six women teachers who almost certainly are nuns, although they do not wear a special garb other than severe, black clothing. In the two federal schools there are nine teachers—two male directors or principals, five female teachers, one male teacher of music (*maestro* or *profesor de música*), and one male instructor in woodworking (*maestro de carpintería*).

HOTELS AND RESTAURANTS

The term hotel (recently introduced into the Spanish language) implies a certain magnitude and a completeness of service which do not exist in Quiroga. However there is one so-called hotel, the Hotel Central in the Portal Matamoros fronting onto the Plaza Principal, which occupies part of the largest private structure in Quiroga. This

was formerly known as the Hotel Vasco de Quiroga, and it has existed as a hotel for more than 40 years. However, it has but six rooms and is not much patronized. The largest rooming house is the Posada Escobedo, formerly the home of one of the wealthiest men in Quiroga, which has 21 rooms. This *posada* is well situated a few doors down Juárez from the intersection of the Pátzcuaro and Guadalajara highways and within sight of the stopping places of all the busses. The front of the ground floor is occupied by a restaurant, a butcher shop, a shoe-repair shop, the *zaguán* or entrance to the *posada*, and a small store. All of the rooms that are rented are on the first floor (second floor in our terminology) which is reached by one narrow stairway. The central or inner patio, with its fountain and modeled frogs, and its shrubs and potted plants, was once one of the finest in Quiroga, but it seems to have been neglected in recent years. This *posada* was opened for business in 1940 as a result of the entry of the improved highway in 1939. The associated restaurant or *fonda* (which is nameless) is run independently of the *posada*. Here, in one small room with one large and two small tables, Doña Julia Rivera and her niece Chucha (aided by ever-merry hunchbacked little Plácida) serve the best meals in Quiroga. Doña Julia opened this *fonda* in 1941. A few doors down Calle Nacional from its intersection with Zaragoza is a nameless "Restaurant y Café," established in 1939, which is the oldest formal eating place in Quiroga and which does the most business thanks to its location where the busses from Tacámbaro and Pátzcuaro to Morelia and Mexico City make their stops. A block and a half down Zaragoza is a four-room *casa de huéspedes* (lodging house) kept by Doña Josefina Domínguez. Although the 1944 commercial census of Quiroga states that this house was opened in 1943 we know this to be an error, since we stayed here in 1939, at which time we discovered that Doña Josefina was a niece of the great Mexican anthropologist Nicolás León who was born in Quiroga. The most recent of the formal lodging and eating places (opened 1943) is the Restaurant Atzimba and associated *casa de huéspedes* on the corner of Zaragoza and Reforma. The above-mentioned places cater to the transient stranger and the wealthier visitor. People from the ranchos and nearby *pueblos* and *arrieros* in passage stay in the *mesones* (inns), of which there are four. In the nineteenth century, when *arriería* was important, there were several fairly good *mesones* (such as La Libertad and La Providencia) which provided both sleeping space and food for man and beast, but now these places are little more than stables where stalls (*macheros*) or floor space (*piso*) are available for animals at 5¢ to 10¢ each per night, and wheat hay or straw is available at 10¢ per kg. The owner of the animals commonly sleeps here also, but he gets his meals at *puestos* on the streets and at stalls in the market plaza. In such cities as Morelia and Pátzcuaro there are still places known as *posadas* and *mesones* which provide both bed and board for travelers, but most of them have ceased to provide for animals. Such places in towns were stops for the stagecoaches, which began to leave the picture when the railroads entered in the 1880's. The equivalent of a *mesón* in the country was known as a *venta*, and such a place formerly existed some 10 miles east of Quiroga in the present community of El Correo. In the market plaza (Plaza de los Mártires) by the church there are four semipermanent food stalls with roofs, hearths, deal tables and benches, where meals are served on market and feast days, and morning, noon, and evening on most other days. In the morning and evening several women set up tables on the south side of the Plaza Principal and serve hot drinks (coffee, *atoles*, chocolate), beans, and a variety of meat and fish dishes. On the adjacent corner, near the principal bus stop, there is a *puesto* for the sale of roasted and boiled meats—chiefly pork, and occasionally mutton, goat, beef, chicken, and turkey. There are perhaps 10 women (*fonderas*) who commonly prepare and sell meals in this fashion, or who specialize in some one dish; e. g., *atoleras* who sell *atoles*, *pozoleras* who sell *pozole*, etc. Wheat breads are usually retailed by the women who sell meals, but tortillas must be purchased separately from a *tortillera* one or more of whom associate themselves with each dispenser of meals. There are at least a dozen women who prepare and sell tortillas in this fashion, although our census yielded only five. The explanation of this discrepancy is that commonly no occupation is given for a woman unless she is the head of the house. The 1940 census provides a good example of this sort of thing since practically all of the women had their occupation listed as household

chores (*quehaceres*) unless they were heads of family or the main source of support. Consequently no *maqueadoras* of *bateas*, or *entuladoras* of chairs were listed, and a considerable number of the other gainfully employed women were listed merely as housewives. Another reason for the reported paucity of *tortilleras* is that a number of them constitute the nearest approach to prostitutes to be found in Quiroga.

PUBLIC EMPLOYEES

The term employee or *empleado* is restricted to "white-collar" workers (as opposed to manual laborers) and comprises most of the salaried holders of public office and clerks in the stores. We have extended the term to embrace all governmental workers. The commercial clerks are mentioned later. Federal employees or office holders include the Federal stamp agent, who is also a merchant; the postmaster, 1 mail carrier, and 1 to 2 clerks; the teachers in the two Federal schools who have numbered from 8 to 10 in recent years; and the physician of the Servicio Médico Social whenever he is in residence. The State employees comprise the tax collector and 1 to 3 clerks and collectors; the watchman or *velador* of the highway shack and equipment on the outskirts of town; and the operator of the telephone station who also acts as secretary of the municipal civil register. There are 12 to 16 other individuals who commonly draw salaries or wages from municipal funds. These include the president, syndic, secretary, treasurer, and sometimes a collector, inspector of the slaughterhouse, secretary of the local court, 2 to 5 policemen, streetcleaner and carter, water-supply maintenance man, town gardener, and mechanic who periodically oils and checks the town clock.

COMMERCE

Quiroga carries on much more commerce than its population would justify. This is because it is on the main highway west from Mexico City to Guadalajara, with a branch southward to Pátzcuaro and Tacámbaro; and many busses and most tourists stop here to purchase food, drinks, "regional curiosities," etc. It is also the principal market town for the people of the entire municipality, and a number of people come to Quiroga from communities outside of the municipality (such as Teremendo, El Tigre, Cuenembo, and Tzintzuntzan) to purchase as well as to sell commodities. Furthermore, since ancient times Cocupao-Quiroga has been the most important community on the route between Pátzcuaro and Tzintzuntzan to the south and Chucándiro and other communities of the Lake Cuitzeo region to the north. During the nineteenth and eighteenth centuries, and probably earlier, packers (*arrieros*) and traveling merchants (*comerciantes ambulantes*) of Quiroga covered the region from San Luis Potosí and Guanajuato in the north to the *tierra caliente* and Pacific coastlands of Michoacán and Guerrero in the south, and Quiroga was an emporium for the exchange of goods between the plateau and the lowlands. At the height of its commercial importance, apparently from the 1840's into the 1880's, the market territory of Quiroga embraced all of the northern portion of the Pátzcuaro Basin and extended outward to include such communities as Lagunillas, Acuitzio, Coapan, and Chapultepec to the south and east, Tiristarán, Copándaro, Chucándaro, Urundaneo Teremendo, Tecacho, Huaniqueo, Puruándiro Coeneo, Comanja, Naranja, Zacapu, and Tiríndaro to the north and west, and along the lake shores to Tzintzuntzan and Erongarícuaro. The first reduction in Quiroga's commercial importance was accomplished between about 1886 and 1914 by the entry of railroads and by the accompanying development of commercial centers in many of the above-mentioned places. The long period of military, political, social and economic unrest from 1910 to 1928 reduced Quiroga to its lowest point in population and commerce since the colonial period. Its packing or transport business (*arriería*) was reduced to practically nothing, most of the manufacturing enterprises were abandoned (rum, vegetable oils, bar soap, etc.), and the local stores catered only to the population of the immediate area. With the improvement of the social-political situation and the establishment of the improved highway between Mexico City and Guadalajara, Quiroga began to recoup some of her losses. This has been most marked since 1937–41, in which years the oiling of the highways was completed, passenger and freight services by bus and truck were inaugurated, tourist trade and commerce in regional handicrafts burgeoned, etc. At present Quiroga is probably the most active town commercially, for its population, in Michoacán.

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The exact number of merchants and of retail stores cannot be stated because the term *comerciante* or merchant includes traveling merchants or peddlers, streethawkers, keepers of plaza and sidewalk booths and displays, etc. Furthermore, many homes maintain a counter and a few shelves in the front room which may be stocked with only a few pesos worth of cheap commodities such as cigarettes, bread, bottled soft drinks, firewood and candles, but such *tendajones* are considered as full-fledged commercial enterprises, and the operators or owners are considered to be merchants. In addition, a number of the handicrafters or cottage craftsmen retail some or all of their products in their homes, and such places are often listed as stores or sales places (*ventas* or *expendios*) although the owners are not considered to be merchants. Also, there are several wholesalers who retail on occasion, as in the case of dealers in seeds and regional handicrafts.

FOOD AND OTHER STORES

The most important type of store is the *tienda de abarrotes* which is essentially a grocery store. The largest of these commonly sell all types of foodstuffs locally consumed excepting fresh meats, vegetables, and fruits. A normal stock consists of maize, beans, *habas*, rice, lard, dried meat, sugar (white granulated and brown sugar in blocks), salt, spices and flavorings, coffee, chocolate, wheat pastes for soup (macaroni, spaghetti, etc.), wheat flour, white wheat breads, crackers and cookies, some tinned foods, hard candies, chewing gum, bottled soft drinks, bottled beer, and eggs. Among nonfoodstuffs the typical *tienda de abarrotes* carries bar soap and *lejía*, candles, kerosene, cigarettes, matches, and possibly firewood and charcoal. Of the above-named items all or most of the maize, beans, *habas*, wheat flour, bread, soft drinks, eggs, *lejía*, firewood, and charcoal are produced locally. Much of the rice, sugar, dried meat, and coffee is obtained from the southern part of Michoacán. The remaining items come from many parts of Mexico and usually are obtained from wholesalers in Morelia and Pátzcuaro. Foodstuffs processed outside of Mexico are practically nonexistent in the Quiroga stores.

In 1945 there were 23 *tiendas de abarrotes* in Quiroga kept by 42 *comerciantes* (including owners, spouses, and older sons). These grocery stores grade on one side into the 8 *tiendas de miscelánea* (average to large grocery stores which also carry goods not associated with grocery stores), and some 24 *tendajones* which are small stores with a restricted assortment of goods either of the *abarrotes* or the *miscelánea* type. Among items carried in the *miscelánea* stores are metal buckets, washbasins, chamber pots, cordage, "straw" hats, thread and yarn, dyestuffs, pigments, paints, linseed oil, plowpoints (*rejas*), cheap table service, brooms, knives, scissors, needles, pins, machetes, writing paper, ink, etc. The larger stores are concentrated in the central blocks, but *tendajones* are scattered over the entire town. There are a total of 55 of the above-mentioned *tiendas* and *tendajones* which handle groceries and other goods. There are several ways of evaluating their importance. In the commercial census of 1944 there were 26 establishments which had an investment of $500 or more; and there were 21 stores which averaged daily sales (November of 1943 and November of 1944) from $8 up to $30. A more accurate evaluation can be obtained from the distribution (in May and June of 1945) of the 100 sacks of sugar allotted to the municipality of Quiroga by the national regulatory corporation known as Distribuidora y Reguladora, S. A. de C. V. Twenty-eight sacks went to bakers, candy and ice-cream makers, and bottlers of soft drinks; 9 sacks went to the 14 merchants in the three western pueblos; and 63 sacks were distributed among 38 merchants in Quiroga. One merchant received 6 sacks, 6 merchants received 4 sacks, 1 received 3½ sacks, and 7 other merchants were allotted from 1½ to 3 sacks. In summary: there were 8 "large" stores, 27 in the intermediate bracket, and 20 small establishments. Of the 35 larger stores, all but 4 are located on the Plaza Principal and the 4 axial streets. Of the 55 stores under discussion, all but 5 were opened for business (in present location and under the present management) since 1937; only 1 dates from before the revolution; and more than half were opened in the period 1941–44.

Specialized stores are not numerous. The four butchershops, one *talabartería*, two *paleterías*, and two drug stores have been mentioned previously. Some of the bakeries have associated *ventas de pan;* several of the tanners have *expendios de suela* (sole leather); a number of the *zapaterías* and *huaracherías* keep stocks of shoes and sandals for sale;

and a number of the other craftsmen (e. g., blacksmiths, tinsmiths, weavers, and carpenters) have a supply of their products for immediate sale in addition to making items on order. There are several wholesale-retail merchants who specialize in poultry and eggs (two), seeds (three), lumber (one), charcoal (one), chile peppers (one), onions (one), etc. Also, there are numerous streethawkers, local peddlers, small merchants who display their goods on the sidewalks and in the arcades, and home-stores which specialize in but one commodity. Among such merchants are three who sell nothing but lime for making *nixtamal*, five who have fruit *puestos*, three who vend sole leather, three who sell shoes and *huaraches*, one who sells serapes, one who sells rebozos, one who sells cotton cloth and rebozos, several who handle firewood and charcoal, etc.

There are five *cajones de ropa* (cloth and clothing stores) which specialize in "yard goods" (principally cottons and woolens, some silks, and a little linen). However, they also handle overalls, trousers, shirts, dresses, underwear, hosiery, ribbons, and other items of clothing. In the Portal Hidalgo is located the only *jarciería y sombrerería* which handles a variety of items made from agave, grass, and palm fibers, such as carrying bags (*morales*), cordage, hats, baskets, etc. On the corner of Portal Matamoros and Calle Benito Juárez is a solitary hand-operated gasoline pump and in the associated store is an air compressor and lubricating oil in sealed tins. There is no garage or automobile-parts store in Quiroga, although there are two "general mechanics," and a *taller mecánico* was being installed at the time of our departure. One merchant maintains a radio agency.

Although there have been small "curiosity shops" or *expendios de curiosidades regionales* for a number of years, it is only since 1939 that large and well-stocked stores have come into being. There are now five fairly large and well-stocked stores which handle not only locally made painted *bateas*, decorated chairs, objects of turned wood, and miscellaneous pieces of furniture, but also pottery from Santa Fe and other nearby communities, woodwork from Paracho, and other products of the arts and crafts of northern and central Michoacán. Three of these stores (Villanueva, Fuentes, and Villicaña) are located consecutively in the first block of *cuartel* IV along the Calle Nacional between the Calle Benito Juárez and the Plaza de los Mártires; a fourth store (Chávez-Anita) is across the street on the opposite side of Calle Nacional; and the fifth and most recent (Villegas) is two blocks down Benito Juárez at the corner of Galeana-Berriozabal. All five stores started as *expendios de bateas y loza* (sales places for painted trays and pottery). The first three, which are the largest, have associated shops which provide such items as turned wood (Villanueva), and chairs (Fuentes and Villicaña). The chair shops are run by brothers of the owners of the curiosity stores. In addition to the 5 large establishments, there are 2 *expendios de bateas* in the Plaza de los Mártires, and several of the restaurants and other stores display small stocks of *bateas*, masks, pottery, etc. Furthermore, there are about 20 merchants who specialize in purchasing *bateas*, chairs, and pottery for sale in other parts of Mexico. These operators vary in scale from traveling merchants who carry their entire capital on their backs to a few who deal in truckloads or even in carloads.

AMUSEMENT ENTERPRISES

There are but a few enterprises devoted to amusement and recreation. Probably in first place would come the saloons or *cantinas*, of which there are four, one in each of the *cuarteles*. However, two of the *cantinas* are merely grocery stores which handle distilled drinks and sell liquors by the glass, and the other two are not elaborate although they are equipped with "juke boxes." There are six "juke boxes" (*sinfonolas*, *radiolas*, *ruidolas*) altogether in Quiroga—two in *cuartel* IV and four in *cuartel* I, four of which are installed in grocery or general stores. There are two poolhalls (*salones de billar*), both in the first block of *cuartel* II. One has four tables, and the other has three. About 1941 a cinema was opened in Quiroga which lasted until September of 1944. This was reopened in the Salón Tere on Ramón Corona, under new management, in June of 1945. It commonly has two shows on Wednesday, two on Saturday, and three on Sunday. Perhaps in this paragraph should be mentioned the one public bathhouse (*casa de baños*) on the western outskirts of town, which has a tank or pool and five stalls with showers. In addition, there are two or three private homes with hot and cold water showers where friends and properly intro-

duced persons may obtain bathing facilities—for a consideration. All other amusements, such as *jaripeos*, cockfights, traveling circuses and carnivals, horseraces, soccer and basketball games, dances, etc., are sporadic.

TRAVELING MERCHANTS

Although much reduced since the revolution, there is still a considerable group of traveling merchants or *comerciantes ambulantes*. This term is used for any merchant who has no fixed place of business (*puesto, despacho, expendio, venta, tendajón, tienda*, etc.), but hawks through the streets, visits the ranchos and adjacent pueblos, or makes long trips into other states. The term does not include the merchants, no matter how small their supply of goods, who occupy space daily or from time to time in the plaza, on the sidewalks, or in the arcades. The local street hawkers and peddlers (as contrasted with those merchants who travel long distances) sell such items as lime, ice cream (*paletas*), candies, soft drinks, and bread. Quite often such persons are known by their specialties; e. g., a *calero ambulante* (traveling salesman of lime), *dulcero ambulante* (candy peddler), etc. Such merchants are probably as numerous as ever. The reduction has been in the merchants who traveled outside of the state and often would be absent from Quiroga for several months. At present there are fewer than 20 of such *comerciantes ambulantes* or *huacaleros* as they are sometimes called because they often carry their goods in a large crate or *huacal* on their backs. The old-fashioned *huacalero* who went everywhere on foot is practically extinct. Although these merchants still cover considerable distances on foot, they are quite apt to take advantage of cheap-fare second- or third-class busses going in their general direction of destination. Among the goods packed out of the Quiroga area are pottery, *bateas*, serapes, and peaches. Frequently these merchants go by bus to the large manufacturing towns to the north (such as León, San Luis Potosí, and Querétaro) where they invest in textiles, leather goods, toys, cutlery, etc. Then they return by bus to Quiroga, or Pátzcuaro, or Tacámbaro, and then proceed on foot or with a burro or two down into the *tierra caliente* of the Balsas Basin and on to the Pacific coast. Before they return to Quiroga they may sell out their original load, restock with products of the areas which they traverse, sell these goods, and repeat the procedure several times. The return load from the coast and the Balsas Basin may include such items as salt, machetes, cheese, dried meat, palm fiber, coconuts, pineapples, etc. Although most of this traffic follows the ancient trade routes from the plateau areas of Guanajuato and Michoacán to the coasts of Colima, Michoacán, and Guerrero (which were all within the prehistoric Tarascan domain, and which constituted the province of Michoacán during most of the colonial period), there is some commerce as far as Tabasco and Chiapas to the southeast. However, with the extension and improvement of rail and bus transportation from the plateau to the *tierra caliente* there has come an alteration of routes in detail and an over-all reduction of trade through the medium of the *comerciantes ambulantes*. Most of the *viajeros* or "long-travelers" are old men and women (more than 40, and with a mean of perhaps 60 or 65 years), and their children are taking to other occupations. The principal distinction between such *comerciantes ambulantes* and the old-time *arrieros* (see Transportation, pp. 197–198) seems to be that *arrieros* always used pack animals.

MARKETS

Although there are three plazas in Quiroga, at present only the Plaza de los Mártires between the Calle Nacional and the parish church is used as a market. We were unable to determine if the Plaza Vieja or the Plaza Principal was used for this purpose before the Plaza de los Mártires was inaugurated in the 1860's. The local market day (*día del mercado, día de plaza, día de tianguis*) is on Sunday. Since Cocupao-Quiroga never has been famed for its market, we do not know when it was established, but probably the market on Sunday dates back to the early Franciscan period or the regime of Bishop Vasco de Quiroga when most of the Tarascan villages were given their occupations and were assigned their market days. Apparently every community large enough to support a resident priest had some sort of weekly market. The size and importance of the market were proportional to the position of the community in the political-ecclesiastic hierarchy. Pátzcuaro, from about 1540 to the present, has had the most important market in the Pátzcuaro Lake Basin. The main market day in Pátzcuaro is on Friday, although there are minor markets on Sunday and

Tuesday. In almost all of the other towns of Michoacán the main market day is on Sunday. By the eighteenth century Cocupao-Quiroga had acquired political superiority to Santa Fe, San Jerónimo, and San Andrés, and probably from that time onward Quiroga had more than merely a local market. Its location on a crossroads and the presence of mestizo and white merchants also insured a greater quantity and variety of goods than was true for the markets of most pueblos. From about the 1840's until the Madero Revolution the Quiroga market attracted people from a much larger area than at present. Then the chaos of the revolution and the railroad from Pénjamo through Zacapu to Ajuno (built 1910–14) conspired to reduce Quiroga's market area to about its present size. The nuclear market area is the present municipality of Quiroga and that portion of the municipality of Tzintzuntzan which was a part of Quiroga until 1930. However, Tzintzuntzan belongs to the market areas of both Quiroga and Pátzcuaro. On the east Quiroga draws a few people weekly from such communities as El Correo, Iratzio, and Capula, but the majority go to Morelia, in which municipality they are situated. Formerly the market area extended westward and northwestward to Zacapu, Coeneo, and Huaniqueo, but the coming of the railroad to Zacapu and of highways and bus lines to the other towns has caused the development of strong commercial and market centers in those communities. However, to the north of the Pátzcuaro Basin and extending nearly to Lake Cuitzeo, is a region which formerly was crossed by the main highway between Morelia and Zamora, but which now belongs in large part to the Quiroga area. Among the settlements outside of the Pátzcuaro Lake Basin which consistently send people to the Quiroga market are (from west to east) Asajo, Comanja, Matujeo, Sipiajo, Teremendo, Tzintzimacato, Tiristarán, and Chucándiro.

The market plaza is roughly 65 meters by 45 meters in dimensions, and nearly all of the surface has been paved with cobblestones. Along the parish house and the church, which constitute the eastern side of the plaza, are 11 privet trees, and distributed in 5 irregular rows are 23 large ash trees. In the northwestern quadrant is a water fountain, a *farol* from the old lighting system, and a number of semipermanent wooden shacks or booths for curiosities and meals of hot food. At the north are house walls broken by a few windows and doors, and one butchershop. At the south is an entrance to the main churchyard and a *tienda de abarrotes*. The entire western front gives directly onto the Calle Nacional. Although the eating stalls and the curiosity booths are open every day, there is nothing which approaches a permanent market such as one finds in Ciudad Hidalgo, Morelia, Zamora, Sahuayo, and some other larger towns in Michoacán and elsewhere in Mexico. On market days the only additions are the chalked areas upon which the occupants pay a tax to the municipal treasury. (See discussion of Municipal Finances, pp. 111–112.) Most of the goods for sale are displayed on tule mats or *petates*. There is a somewhat orderly arrangement of the market by commodities and by communities. Along the parish house are stacks of *petates* for sale by men from San Andrés, San Jerónimo, Santa Fe, and occasionally from other lake communities. The northern third of the plaza is occupied chiefly by venders of vegetables. These vegetable sellers, chiefly women, are normally arranged in four parallel rows. The women from each community represented (Ichupio, Tzintzuntzan, Santa Fe, Quiroga, etc.) commonly have their *pisos* next to each other, but apparently this represents a desire to be among friends and acquaintances rather than any attempt toward community segregation. Approximately the middle third of the plaza is occupied by three or four rows of pottery merchants, both men and women, with sellers of utilitarian ware from Tzintzuntzan predominating. Along the sidewalk fronting the Calle Nacional are the venders of folk remedies, hats, bags, baskets, yardgoods, cheap jewelry, metates, etc. This can be termed the miscellaneous or "five and ten" section of the market. Along the same sidewalk and within the plaza, in the vicinity of the food stalls and the vegetables, are the venders of fruits, peanuts, fresh and cooked fish and waterbirds in season, lime, and a few other commodities. At the south end of the plaza, and near the walk leading to the side entrance of the church, are displayed goods which vary greatly in nature and in origin with the season, such as roasted agave or *mescal* and sugarcane.

Although we made inventories of the Quiroga market on several Sundays from December to

June, we have only hearsay information for the remaining months of the year. Consequently, we cannot present a complete list of the goods marketed and the communities represented for an entire year. The following summarized information, therefore, should not be considered as completely representative of the local market. From the records of the municipal treasury it seems that the greatest number of people and the largest value of goods are present invariably in December; the second most important market month is always September; and the third busiest month is commonly April. The poorest month is not invariable but it is most apt to be June, July, or August. The normal arrangement of months, from most commerce to least, is: December, September, and April; May, March, and October; January, February, and November; August, July, and June. This distribution represents the interaction of such factors as rainy season and main period of planting and cultivating (June–August), completion of maize and bean harvests (December), numerous or important festivals (December, September, and April—which usually contains both Easter Sunday and Palm Sunday), etc. The principal goods marketed are vegetables, fruits, and pottery. Some of the vegetables and fruits are locally produced, but the bulk of the items sold in the market come from outside of the area of Quiroga town and its ranchos. During our period of observation more than two-thirds of the venders came from Santa Fe, Quiroga, and Tzintzuntzan (with Ichupio, La Orilla, and other coastal communities); in a secondary group were venders from Morelia, Pátzcuaro, San Jerónimo, San Andrés, and Chucándiro; and there were smaller numbers from other communities (not represented at every market) such as Teremendo, Capula, Chapultepec, Cuanajo, San Nicolás Obispo, Ihuatzio, Comanja, etc. Most of the venders (especially those from Santa Fe, Tzintzuntzan, and the other lake-shore communities) sold fruits and vegetables of their own raising, and handicrafts of their own making. Perhaps one-half of the natives of Quiroga who sold in the market retailed fruits, vegetables, and other commodities purchased in Morelia, Pátzcuaro, Tacámbaro, and more distant points in Michoacán, Guanajuato, México, and other States. The merchants from Morelia and Pátzcuaro sold a large variety of items of quite varied provenience.

Items sold in the Quiroga market, December to June

Fresh and dried grains, flavorings, vegetables, and fruits

Dried beans.	Onions.	Lemons.
String beans.	Peanuts.	Limes.
Beets.	Green peas.	Mangos.
Cabbage.	Potatoes.	Melons.
Carrots.	Pumpkins.	Oranges.
Chayote fruit.	Radishes.	Papaya.
Chayote root.	Sesame seed.	Passionfruit.
Chilacayote.	Sweetpotatoes.	Peaches.
Chiles.	Tomatoes.	Pears.
Coriander.	Turnips.	Pineapples.
Cumin.	Avocados.	Plums.
Garlic.	Bananas.	Sugarcane.
Habas.	Capulines.	Tejocote.
Husk tomatoes.	Chirimoyas.	Sour tunas.
Jícama.	Citron.	Sweet tunas.
Lettuce.	Coconuts.	Watermelons.
Shelled maize.	Guavas.	White *zapotes*.
Marjoram.		

Other foodstuffs [1]

Dried and salted beef.	Boiled habas.
Ranch cheese.	Boiled and roasted maize ears.
Cooked and uncooked ducks and coots.	Roasted mescal.
Eggs.	Tamales.
Cooked and uncooked fish.	Semitas, corundas, and other breads.
Boiled chayote fruit.	Pulque.
Boiled chayote root.	
Boiled chilacayote.	

Other items

Metates.	Folk medicines—Continued
Lime.	Flor de changunga.
Chocolate beaters.	Guaco.
Fire fans.	Habilla de San Ignacio.
Wooden spoons and ladles.	Jamaica.
Chinaware.	Nuez moscada.
Enameled ware.	Ojo de venado.
Tinware.	Palo de brasil.
Sieves.	Palo de quina.
Pottery.	Palo de Tres X.
Petates.	Peonía.
Oil lamps.	Pimienta.
Brooms.	Pimentón.
Baskets.	Pinzán.
Carrying bags.	Pirul berries (also for bird-seed).
Soap.	
Beeswax.	Prodigiosa.
Lagenaria gourds.	Tabachín.
Crescentia calabashes.	Ucuares.
Folk medicines:	Etc.
Anis.	Canvas.
Anis de estrella.	Woolen cloth.
Bola de caulote.	Cotton prints, etc.
Cirián.	Ribbons.
Copal.	Stockings and socks.
Clavo.	Straw hats.

[1] This list does not include the foods served in the booths.

Items sold in the Quiroga market, December to June—Con.

Other items—Continued

Trousers.	Handkerchiefs.
Huaraches.	Sashes.
Shoes.	Belts.
Purses.	Napkins.
Needles and pins.	Toy guitars.
Scissors and knives.	Dolls.
Threads and yarns.	Other toys of wood, terra cotta, etc.
Mirrors.	Glass.
Combs.	Religious pictures.
Palm raincoats.	Cheap jewelry.
Blankets.	Etc.
Shawls.	
Shirts.	

The origins of commodities produced within the Pátzcuaro Basin could be determined rather readily, but many items purchased from wholesalers in Morelia, Pátzcuaro, Tacámbaro, etc. could not be traced farther. Most of the vegetables were raised in the lake lowlands near Tzintzuntzan, Chapultepec, Santa Fe, and Pátzcuaro; small quantities were raised in Quiroga; *jícamas*, peanuts, and sweetpotatoes came chiefly from the State of Guanajuato; potatoes came in part from the Valley of Toluca; chile peppers came from the Pátzcuaro Basin, the *tierra caliente* to the south, Queréndaro and Chucándiro to the north, and the States of Aguascalientes, Guanajuato, and San Luis Potosí; garlic was purchased wholesale in Morelia and Pátzcuaro and also came from Panindícuaro; onions were produced in the basin, purchased from jobbers in Morelia and Pátzcuaro, and obtained from Chucándiro and Panindícuaro; sour tunas came chiefly from the Morelia area; and sesame seed came from the Balsas Basin. Most of the temperate and some of the subtropical fruits came from the Pátzcuaro Basin and the Tarascan sierra. Most of the tropical fruits were attributed to Pátzcuaro, Tacámbaro, and Ario de Rosales, although in most of these cases the actual origin was from communities in the valleys and slopes leading down to the *tierra caliente* or in the heart of the *tierra caliente*, such as La Huacana, San Pedro Jorullo, Apatzingán, and Taretan. Bananas also came from Veracruz and Tabasco; pineapples came from Guerrero, Veracruz, and Oaxaca; coconuts came from coastal Guerrero as well as from the Balsas Basin; most of the oranges came from the Montemorelos district in Nuevo León; the melons were from Guanajuato State and the watermelons came from the *tierra caliente*, and sugarcane was brought in from both the south and the north (Chucándiro, etc.). Most of the dried beef and the cheese originated in the *tierra caliente*. The other foodstuffs came principally from the northern lake communities, especially Tzintzuntzan and Santa Fe. The other items had quite varied origins: metates from San Nicolás Obispo (about 12 miles to the east at the foot of the Cerro del Aguila); lime from Etúcuaro el Grande (south of Acuitzio); chocolate beaters, wooden spoons, and rebozos from Paracho; fire fans of tule and of wheat straw from Santa Fe and Quiroga; cheap chinaware (chiefly Amfora and Favorita marks) from Mexico City; glass from Mexico City, Puebla, and Guadalajara; enameled ware and oil lamps from Monterrey; baskets from Ihuatzio and Capacho; utilitarian and some decorative pottery from Tzintzuntzan, Santa Fe, Capula, Sipiajo, and Dolores Hidalgo; *jícaras* and *bules* from Uruapan and San Pedro Jorullo; most of the folk medicines from the *tierra caliente*; canvas from Salvatierra in Guanajuato; woolens and cottons from the Federal District, Querétaro, Guanajuato, Puebla, and Veracruz States; straw hats from Jarácuaro and Sahuayo; etc.

By 8 o'clock in the morning the market was in full swing, and by 3 o'clock in the afternoon most of the people had left. On the basis of checking ordinary Sunday markets (not markets that coincided with important festivals) we concluded that there seemed to average between 70 and 90 venders (not counting members of a family who might assist in selling). In addition to the venders in the market there were many individuals who sold their commodities directly to wholesale and retail merchants in Quiroga. We were not able to make an adequate check of such individuals. Also, on Sundays there was an increase in the number of people who peddled their wares through the streets and in the number of miscellaneous *puestos* in the arcades and on some of the sidewalks away from the market plaza. The ease and rapidity of bus communication between Quiroga and Morelia and Pátzcuaro has greatly increased the number of traveling merchants who handle assorted wares ranging from cheap jewelry and toys to ready-made clothing.

TRANSPORTATION AND COMMUNICATION

HISTORY

There is very little information concerning the status of transportation and communication in Cocupao-Quiroga during the colonial period. Its position on the most direct route from Pátzcuaro and Tzintzuntzan northward to the hot springs of Chucándiro and Puruándiro, the great estates of the Villaseñor family centering on Huango, and the mining communities of Guanajuato, undoubtedly produced a considerable amount of through traffic during the sixteenth century. However, the substitution of Valladolid-Morelia for Pátzcuaro as the most important settlement in Michoacán in the last quarter of the sixteenth century undoubtedly reduced this traffic to a small fraction of what it had been. The main roads from Pátzcuaro and Tzintzuntzan to Valladolid led to the east of Cocupao throughout the colonial period and until the 1920's; and the two main highways crossing Michoacán from east to west went to the north and south. Until the modern highway was constructed the chief route from Morelia to Guadalajara went through Tiristarán, Tecacho, Caurio, Tlazazalca, and Zamora to the north; and the southern alternate route went via Capula and El Correo or by way of Santiago Undameo and Jesús Huiramba to Pátzcuaro, and thence westward through Pichátaro, Sevina, etc. Effectively the entire northern portion of the Pátzcuaro Lake Basin, from Tzintzuntzan around to Erongarícuaro became a peripheral or "offside" area which was practically never visited by strangers or foreigners, and which was traversed only by a fairly local traffic. Although a few individuals who have written of their travels in Michoacán did make an effort to visit Tzintzuntzan from Pátzcuaro, no one visited or went through Cocupao-Quiroga. For example, Alexander von Humboldt in 1803 went through Capula, but he continued on directly to Pátzcuaro; in 1826 G. F. Lyon passed through Tiristarán to the north; and the many travelers from the 1830's on (such as Madame Calderón de la Barca, W. H. Bullock, E. Seler, and C. Lumholtz) got no closer than Pátzcuaro and Tzintzuntzan.

However, despite its offside position with reference to main highways, Cocupao-Quiroga became an important point on a secondary transportation network. A number of communities to the north of the Pátzcuaro Basin continued to be in the political jurisdiction of Pátzcuaro, and the trails from these settlements (such as Coeneo, Huaniqueo, and Teremendo) converged on Cocupao. Furthermore, wheeled traffic between the mining settlements of Guanajuato and the rich agricultural communities of the *bajío* to the north and the *tierra caliente* and Pacific coastlands to the south virtually was lacking until the twentieth century. One of the leading *arriero* routes from Acapulco and Zacatula on the coast to Guanajuato went through Pátzcuaro and Cocupao. This route was of considerable importance until the railroad network began to develop after 1880. The old Mexican National Railroad, building out from Mexico City, reached Toluca in 1880, Acámbaro in 1883, Morelia on September 12, 1883, Lagunillas on November 16, 1885, Pátzcuaro on June 1, 1886, and Uruapan on February 13, 1899. In 1934 an extension southward from near Uruapan was begun, which was planned to reach the coast at Petatlán or Sihuantanejo, but so far it has been completed only to Apatzingán on a western lateral from the main route. Also in the 1880's the Mexican Central Railroad was built between Mexico City and Ciudad Juárez, and a western lateral was extended from Irapuato via Pénjamo to Guadalajara. In 1909 these railroads and others were consolidated into the National Railways of Mexico, and between 1910 and 1914 a branch line was built from Pénjamo through Zacapu and Comanja and a short distance west of Opungio and Erongarícuaro to Ajuno on the railroad between Pátzcuaro and Uruapan. These railroads cut heavily into the carrying business of the *arrieros*, reduced the trade area of Quiroga, and converted the bulk of the carrying business into a short haul over the 13-km. route from Quiroga to the nearest point on the railroad at La Cacana, or Estación Chapultepec as it is now known.

HIGHWAYS

During all of these years Quiroga depended primarily on pedestrians and on pack animals to move its goods. The prehistoric Tarascans lacked pack animals, and humans packed everything on their backs, shoulders, and heads. Although the Spaniards introduced the horse, the burro, and the mule in the 1520's and 1530's, apparently wheeled vehicles were not used in the northern

part of the Pátzcuaro Lake Basin until some time in the nineteenth century. As late as 1884 León (1887–88) stated that the only vehicular road connecting Quiroga with the outside world was the road south to Pátzcuaro, which bypassed Tzintzuntzan by using the Zirandangacho-Puerto del Colorín route to the east of the Cerro Yahuarato. However, in 1873–75 the *ayuntamiento* of Quiroga improved the road eastward via Atzimbo to El Correo so that it was considered to be good enough for a *diligencia* (stagecoach), but apparently no stage route was established. Even earlier, in 1861, there is mention in the municipal records of an *Estación* and of an *Estación Vieja*. Possibly these stations were the depots of a stage line between Quiroga and Pátzcuaro. During the regime of Governor Jiménez 1885–91 many roads were paved with cobblestones, and stone bridges were constructed over the larger streams in various parts of Michoacán. From this period, and specifically from 1886, dates the connection of Quiroga with the outside world over "improved" highways. However, only the roads to Pátzcuaro and Morelia were opened to wheeled traffic. These various highways or *caminos reales* were periodically repaired, the last time being after the revolution, in the 1920's. In that same decade a "graded" highway entered Quiroga. The exact date is uncertain but apparently a dry weather road westward from Morelia toward Guadalajara reached Quiroga about 1925, and in that year the first automobile passed through Quiroga. However, the present main highway from Mexico City to Guadalajara (National Highway No. 4) was not completely widened and graded as far as Quiroga until 1937, and the oiled pavement was not completed into Quiroga until 1938.

The present status of the paved (oiled) roads in the region is as follows: Camino Nacional Numero Cuatro, Mexico City to Guadalajara, all paved, 427 miles. Quiroga is a trifle west of the midway mark, being 222 miles from Mexico City and 205 miles from Guadalajara. At Quiroga a paved branch road goes south through Tzintzuntzan and Pátzcuaro to Tacámbaro, 49 miles distant, and a lateral from this road continues via Ario de Rosales into the *tierra caliente* and across the Balsas River (this is not an all-weather road). Forty-five miles west of Quiroga, at the Carapan Y, a paved branch road goes by way of Cherán and Paracho to Uruapan, a distance of 43 miles. A dry-weather road continues from Uruapan into the *tierra caliente*, and ramifications connect with Lombardía, Apatzingán, Tepalcatepec, etc. Some distances from Quiroga are:

Quiroga—east:
- Atzimbo, 2.5 miles.
- Puerto del Tigre, 7 miles.
- El Correo, 9.5 miles (off the road).
- Iratzio, 10 miles.
- Capula, 13 miles (off the road).
- Tacícuaro, 16 miles (off the road).
- Morelia, 26 miles.
- Ciudad Hidalgo, 89 miles.

Quiroga—west:
- Santa Fe, 2.5 miles.
- Chupícuaro, 4.5 miles.
- San Jerónimo, 7.5 miles (off the road).
- Puerto Aratzipo, 9 miles.
- Comanja, 16.5 miles.
- Zacapu, 26 miles.
- Carapan, 45 miles.
- Zamora, 69 miles.

Quiroga—south:
- Patambicho, 2.2 miles.
- Tzintzuntzan, 5 miles.
- Pátzcuaro, 15 miles.
- Ario, 47 miles.

All public roads used by through traffic are referred to as *caminos reales*. Such roads that can be negotiated by wagons and automobiles are called *carreteras*, as distinguished from *caminos de herradura* which are narrow roads and trails that cannot be used by wheeled vehicles. There are a number of *caminos de herradura*, most of which are quite ancient and in very poor condition, which fan out toward the northwest, north, northeast, east, and southeast. The more important of these trails go to Coeneo; Teremendo and Huaniqueo; La Tirímicua, Icuácato, Sajo, and Chucándiro; Caríngaro or Atzimbo, Sanambo, and Capula; and Zirandangacho, Corrales, El Crucero, and the Estación Chapultepec. All of these roads are in such poor repair that many sections are difficult to traverse either on horseback or on foot. Theoretically the municipality should repair and maintain the roads within its doman, but nothing has been done for a number of years.

Although the paved roads are used somewhat by locally owned motor vehicles, most of the traffic consists of passenger busses, freight trucks, and Mexican and foreign tourists. The pedestrians and animal drivers are learning to keep to the sides of the roads or to stick to the old trails.

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In 1945 there were owned in Quiroga 1 motorcycle, 13 bicycles, 8 passenger automobiles, 6 trucks (*camiones de carga*), and 3 pick-up trucks (*camionetas*). Fourteen individuals, all of them merchants or industrialists, own the 18 motor vehicles, and one of these men owns 2 trucks and 2 automobiles. The most important factor in the transportation set-up in Quiroga consists of the numerous freight and passenger truck lines which operate through Quiroga, although no transportation company has a formal depot or station in Quiroga. However, there are eight men in Quiroga who work frequently or steadily as drivers (*chóferes*) or conductors and fare collectors (*cobradores*) for several of the cooperative bus lines which run through Quiroga. The first bus line over the Pacific highway (C. N. No. 4) was established in 1937. Since then, on the basis of laws 1937/1938 regulating cooperatives, numerous cooperative "societies" of limited responsibility (S. C. L.) were set up in the fields of passenger and cargo transportation. These autotransport companies are of two general types: those originating in Mexico City, Guadalajara, or in-between points (Zitácuaro, Morelia, Pátzcuaro, Tacámbaro, Ario, Uruapan, Zamora, Sahuayo, and Tizapán) which run busses and trucks from the starting point to Mexico City and Guadalajara; and local regional lines which cover segments of the Mexico City—Guadalajara route and adjacent areas off the main highways. There are at least a dozen bus lines which operate through Quiroga, and more than 40 passenger busses go through Quiroga daily. The comparatively few (eight) first-class busses (*Servicio de primera clase*) discharge passengers in Quiroga, but commonly do not stop to take on passengers. Practically all of the other busses make regular stops to discharge and take on passengers; a number stop 10 minutes to half an hour to allow passengers to eat in the restaurants or purchase food from the corner *puestos;* and several busses stop for incoming and outgoing mail. All stops are made near the intersection of Juárez, Nacional, Zaragoza, and the Plaza Principal, where there is the greatest concentration of restaurants, food, soft drinks, ice cream, and cigarette *puestos*, and curiosity shops.

BUS LINES

The leading bus line is the Federación de Cooperativas "Estrella de Occidente," which runs first- and second-class busses directly between Mexico City and Guadalajara, with a limited number of stops en route. This federation of cooperatives (all of whose busses carry a large white star in a circle with the letters "EO" inside of the star) also provides local second-class service between Mexico City and Morelia, Mexico City and Tizapán, Mexico City and Uruapan, Mexico City and Sahuayo, Morelia and Guadalajara, Zitácuaro and Tacámbaro, Morelia and Tacámbaro, Morelia and Uruapan, Morelia and Zamora, and Morelia and Tizapán. All of these busses run through Quiroga. The busses of this line and all others are commonly referred to as *flechas* (arrows), although none carries an arrow at the present time, and it has been many years since a red arrow was employed as a distinctive symbol. First-class busses normally are decorated in blue and white, and second-class busses are painted in red and white, although one local second-class line has painted its busses in blue and cream. In addition to "class" colors, the name and symbol of the line, and the names of the terminal cities in large letters, nearly every bus has its individual name (like Pullman cars), which may be that of a place along the route (e. g., Zapotlanejo), some regional item of note (e. g., Mariachi), etc.

Other bus lines are:

"La Occidental de Transportes," Mexico-Morelia-Guadalajara, second class.

Sociedad Cooperativa de Trabajadores de Auto-Transportes, Mexico-Morelia-Pátzcuaro-Uruapan-Guadalajara-León, second class.

"Valle de Guayangareo," Mexico-Morelia-Pátzcuaro-Uruapan-Guadalajara-León, second class.

Auto-Transportes "El Duero," Mexico-Morelia-Guadalajara-Uruapan, second class.

Sociedad Cooperativa de Auto-Transportes de Pasajeros "El Aguila," Mexico-Morelia-Guadalajara, second class.

Sociedad Cooperativa "Transportes del Suroeste," Morelia-Quiroga-Pátzcuaro, second-class mixed passengers and freight.

Sociedad Cooperativa de Auto-Transportes "Tacamba," Morelia-Pátzcuaro-Tacámbaro, second class.

Sociedad Michoacana de Auto-Transportes del Suroeste, Ario-Pátzcuaro-Quiroga-Morelia, second class.

Name not ascertained, Morelia-Quiroga-Comanja-Coeneo-Huaniqueo, second-class mixed passengers and freight.

Most of the inhabitants of Quiroga have neither the opportunity nor the desire to use the first-class busses. Such busses differ from the second-class busses in color; are newer and in better repair; have better motors and make faster time; reserve seats for passengers and commonly do not carry more than four or five passengers above the legal limit (seated on jump seats in the center aisle); have leather-covered and comparatively soft seats; and provide more leg room. The second-class busses are generally dirty and in poor repair; frequently have engine trouble and punctured tires; contain hard wooden or scantily upholstered seats; are crowded to literal capacity; and will stop any place to discharge or take on passengers. The typical bus has a General Motors or Ford chassis and motor, with a body constructed in Mexico. There are two doors for passengers at front and back on the right-hand side, and a ladder at the back leads up to a large luggage platform on top. In front, near the driver's seat, is a small picture or image of the Virgin of Guadalupe with a small electric light instead of candles. Apparently the Virgin has replaced Saint Anthony and Saint Christopher as the patron of travelers and transporters of goods. At each stop there is a struggle between passengers descending (usually to buy a bottle of pop, a tamale, or some *tacos*) and would-be passengers hoping to find seats. However, seats temporarily abandoned but marked with a hat, bag, or comic book, or protected by other passengers, normally are respected. After the last passenger has been crammed into the bus the collector slams the doors shut, mounts the rear ladder, and signals the driver to proceed by banging on the body of the bus. When the town has been cleared, the collector worms his way into the bus, and begins to sell tickets to the new passengers. His progress is slow, since usually all 18 to 28 seats are filled, and the aisle is crammed with standing men and squatting women. On several occasions we have counted between 40 and 50 passengers in busses whose legal limits were one-half of those figures. A further complication is introduced by the fact that many passengers, usually those going to the nearest market town, will have baskets and sacks (containing everything from maize and eggs to pigs and poultry) with them inside the bus. Passengers who get on busses in Quiroga commonly can get seats by the time the bus reaches Morelia (there is relatively little movement westward), but occasionally they must stand the entire way into Mexico City. When going through certain well-policed towns the standing passengers are requested to duck down so that the bus will seem to have only a legal load. Should a passenger feel the urge of nature, all he has to do is bang on the side of the bus and the driver commonly will stop. Some fares in 1945 were: first class, Mexico City to Quiroga, $11.60; second class, between Quiroga and Mexico City, $8.10; second-class, Quiroga to Morelia, $1; second-class, Quiroga to Zacapu, $1; and second-class, Quiroga to Pátzcuaro, 50¢. The second-class schedule calls for 1 hour to cover the 26 miles to Morelia, but commonly it takes 75 minutes; the return trip is a trifle faster.

ARRIEROS

The presence of passenger- and freight-transportation lines, and the ease of communication over oiled roads with railroad stations at Morelia, Pátzcuaro, and Comanja, have nearly eliminated all other forms of transportation excepting local traffic in the municipality and northward. The *arrieros* consider that their profession practically has disappeared. Apparently *arriería* has gone through three stages in the last one hundred years. Formerly the *arrieros* were traveling merchants who owned one or more mules or burros, and who would purchase any salable commodity (local or outside of the area) and transport it into regions where they could dispose of their cargo and return with other goods which could be sold en route or in the Quiroga area.

From 1886 until 1914 was the second stage or period, during which the development of a railway network constricted their area of endeavor. Many or most of the *arrieros* became hired transporters of goods between Quiroga and the railroad station at La Cacana. Most of the outgoing cargo consisted of maize, wheat, and beans. An indeterminate number of *arrieros* continued as traveling merchants. Some of these would travel as far as points in Guanajuato and San Luis Potosí to obtain merchandise which they would sell over the south and southeast of Mexico, from Colima to Chiapas and Tabasco. More commonly the *arrieros* would purchase pottery in Santa Fe and Tzintzuntzan, and *bateas* and other local products

of Quiroga, and would travel only 2 to 6 weeks, principally in the *tierra caliente* of Michoacán and Guerrero, and occasionally as far as Colima or Acapulco. The most common return cargoes consisted of bananas, rice, hides, salt, pineapples, coconuts, dried meat, and cheese (the order of mention of these commodities approximates that given us by a number of the older *arrieros*). The number of animals used and the quantity of cargo carried varied greatly according to the resources of the different *arrieros*. According to several of our informants, an average trip of about 22 days netted in the neighborhood of $25. A commonly followed route led from Quiroga, through Tzintzuntzan, Pátzcuaro, Santa Clara (Villa Escalante), Ario de Rosales, Puente Alto, Rancho Nuevo, and on to Churumuco near the Balsas River, and return was made by way of La Huacana, Nuevo Urecho, and Ario de Rosales. Another commonly used route went by way of Ario and Nuevo Urecho and on across the Río Grande de Tepalcatepec to Carrizal de Arteaga where salt was purchased, and returned via Tumbiscatio, Nueva Italia (where rice was obtained), Lombardía, and Nuevo Urecho. A third but less important route went to Acalpican on the coast of Michoacán (in what was a part of Guerrero until 1906), via Carrizal de Arteaga, whence pineapples and salt were obtained. A fourth and quite minor route went to Coahuayana and on to the coast of Colima, which was also used by *arrieros* seeking pineapples and salt.

The third or modern period has witnessed the death of the religious *gremio*, the cessation of distant journeys, and conversion of practically all of the *arrieros* into hired packers of local products (chiefly grains, firewood, charcoal, adobes, tile, and water) within the municipality and as far as El Tigre, Chucándiro, and Teremendo. The *gremio de arrieros* is said to have disappeared when the oiled road entered Quiroga (*al entrar la carretera*) or "some 4 or 5 years ago" (as of 1945), which would be approximately between 1937 and 1941. Formerly it was one of the most important of the guilds in Quiroga, and took care of the festivities on some day in May in an especially elegant fashion. Two religious functions were paid for (a mass in the morning, and a rosary in the afternoon), many firecrackers were exploded during the day, a display of fireworks was made in the evening, musicians were hired, and the members of the *gremio* had a banquet. The profession of *arriero* persisted until the highway was finished (oiled); and then the *arrieros* (so the local accounts go) gave up completely, and abandoned, gave away, or sold all of their animals. The few animals (burros) now owned by the *arrieros* were purchased more recently after some of the men had gotten over their initial despair. No distant trips, even to Churumuco or Arteaga, have been made for a number of years. At present there are 23 *arrieros* (including sons, and some old men). Their average income is $1 per animal per day.

LAKE TRANSPORTATION

Since the lands immediately touching the lake belong almost entirely to Santa Fe and Tzintzuntzan, the people of Quiroga are not and never have been users of the lake. They do not fish, hunt ducks, cut tule, or own any type of watercraft. However, from about 1888 until about 1918 some use was made of a lake steamer which was launched at the Pátzcuaro *embarcadero* in 1887. This ship, the *Mariano Jiménez*, reached Veracruz in January of 1887 in 800 pieces. It was floated at Pátzcuaro May 5, 1887, as a two-decked, 85-foot, steam-propelled vessel which could make 4 knots an hour. For some 30 years this ship made fairly regular daily cruises of the lake which included stops for passengers and freight at Ibarra, Charahuen, Erongarícuaro, San Andrés, and Quiroga. Between 1887 and 1889 the municipality of Quiroga constructed a cobblestoned highway (Calzada del Muelle) south from Las Carreras to the lake shore, and erected a small wharf (*muelle*). At present the road dwindles off into weeds and fields near the lake, and no vestige of the wharf remains. From about 1918 into the 1920's motorboats made regularly scheduled trips from Pátzcuaro to Quiroga. Some of the Pátzcuaro motorboats at present make chartered trips to the Quiroga shore, but this is rare since the passenger must wade ashore through the tule and mud shallows and then has nearly a mile to walk before reaching town. Very definitely Quiroga is not a "lake community," although it is situated within the lake basin and within sight of the lake.

COMMUNICATIONS

The mails, a telephone line, and private radio receiving sets constitute the chief forms of com-

munication with the outside, in addition to the ubiquitous "grapevine telegraph." By at least 1843 a post office (*oficina de correos*) was established in Cocupao-Quiroga. In 1868 mails went out and came in three times a week, through Pátzcuaro and Morelia. At some uncertain time in the nineteenth century the office was raised to the rank of a first-class post office (*administración de correos*). At present it is a full-fledged first-class post office with a postmaster, one to two clerks, and one postman (*cartero*). There are two dependent postal agencies, one in Tzintzuntzan and the other in Santa Fe (unpaid and unofficial). Office hours are from 9 to 13 (1 o'clock) and 15 to 18 on ordinary days, and 9 to 13 on Sundays and holidays (with curtailed service). Mail is delivered to houses twice daily. There is one mailbox (*buzón*), in the Portal Hidalgo, whence mail is collected at 7:30 and 15:15 daily. The mails are carried under contract with the Sociedad Michoacana de Auto-Transportes del Suroeste. Mails go out daily to Morelia at 8, 9, and 15:50, and to Pátzcuaro at 9:15 and 16:15; and mails come in daily from Morelia at 9 and 16:15, from Pátzcuaro at 8 and 15:45, and from Coeneo at 9. As mentioned previously, there is no Federal building, and the post office is in the home of the postmaster who for many years has been Don José Medina Gaona. This post office does an unusually heavy business in domestic and international money orders due to export of chairs and other regional handicrafts, import of wheat, and remittances from *braceros* to their families in the northern part of the lake basin. However, the movement of letters and periodicals is relatively small (table 30).

The movement of monies into and out of Quiroga indicated by the above statements of money orders sold and cashed does not represent more than a major fraction of such movements in Quiroga. Several of the merchants and industrialists serve as private bankers, and both issue and accept letters of credit and a variety of drafts. Furthermore, quite frequently the monies involved in the export and import of commodities by the carload (through Morelia and Pátzcuaro) are handled by drafts on banks. We were unable to obtained adequate information concerning such transactions. However, the cash involved in the movement of one carload often equaled an entire month's transactions in postal money orders.

TABLE 30.—*Movements in the Quiroga post office, 1944–45*

Year and month	Ordinary stamps	Air-mail stamps	Value of money orders sold	Domestic money orders cashed	International money orders from U. S. A. cashed
1944					
May	$214.58	$57.95	$8,202.02	$14,054.35	$11,419.20
June	286.45	62 40	8,178 74	12,201.47	9,038.40
July	244.03	84.80	7,137.89	14,883.94	8,011.20
August	289.13	113.90	5,516.97	19,684.25	20,709,60
September	315.81	93.45	6,529.55	18,020.00	29,056.80
October	503.13	113.25	8,187.08	20,477.81	25,929.60
November	274.41	68.40	10,553.33	19,191.46	22,382.15
December	244.36	47.75	7,943.41	15,481.01	10,899.60
1945					
January	352.48	63.44	9,022.10	18,798.74	6,248.16
February	374.69	49.51	8,584.02	17,968.38	6,113.52
March	382.78	58.03	12,046.73	20,224.83	5,305.92
April	275.12	156.28	10,775.47	18,003.19	4,632.00
Total	3,756.97	969.16	108,657.31	208,989.43	159,747.16

A Federal telegraph line reached Pátzcuaro in March of 1871 and was extended to Quiroga in September of 1878. In 1893 changes were made in the system; the line between Morelia and Pátzcuaro became a combined railroad and State telegraph line; and the telegraph in Quiroga was replaced by a State telephone office. In 1899 a connection was made with a telephone line which came down from the north through Puruándiro, Huango, Huaniqueo, and Coeneo. At present the office of the Telégrafos y Teléfonos del Estado de Michoacán is in the Municipal Palace, and the scribe of the civil registry is also in charge of the telephone. In addition to this office there is one private subscriber in Quiroga.

There are no radios in the ranchos, since battery radios are unknown in the municipality, and all 62 radios in the town of Quiroga are operated by electricity obtained by plugging into electric light vents or sockets. These radios were distributed in 1945 among the *cuarteles* as follows: I—22 radios, II—11 radios, III—15 radios, and IV—14 radios. Naturally, these are only in houses wired for electric lights. Radios are found not only in the homes of the wealthier citizens, but also in a number of the stores (where they serve as sources of entertainment and information for a large part of the residents of Quiroga), and in an increasing number of homes of handicrafters (weavers, painters, et al.). The radio undoubtedly has been a great boon to Quiroga since it serves as newspaper and novel for the illiterate, and helps to compensate the workers for the increased commercialization of the handicrafts. We made no study of the subject, but the results of studies

elsewhere indicate that the workers in workshops equipped with radios are more contented and productive than those in shops without music or other entertainment.

All the electricity now used in Quiroga is provided by the line constructed by the Comisión Nacional de Electricidad from the Planta de Bartolinas near Tacámbaro. This line has a lateral near Sanabria which supplies a number of the southern lake communities, and the main line continues from Quiroga through Santa Fe, Coeneo, Comanja, Tiríndaro, etc. There are two transformers in Quiroga; and all consumption of electricity is under the supervision of Manuel Torres, the owner of the flour mill. This industrialist provided local electricity from 1930 to 1942 with a 13.5 kilowatt direct current plant. The first electricity in Quiroga dates back to 1906, when a wood-fueled two-dynamo steam plant "La Providencia" provided direct current.

LIFE IN QUIROGA

Although we made no formal investigation of what might be called the sociology of Quiroga, the results of occasional and random notes on such topics as religion, education, dress, foods, recreation, etc., are given here to round out the picture. Somewhat comparable material, in much greater detail, will be found in other monographs of this series—especially in Dr. George Foster's report on neighboring Tzintzuntzan (1948).

RELIGION

The material aspects of religion in Quiroga, as elsewhere throughout most of Latin America, are far more manifest than in most of the United States. This is to be expected because (*a*) the overwhelming majority of the people belong to one and the same church, and (*b*) this church—the Roman Apostolic Catholic Church—through its missionaries and priests introduced both religion and Western European material culture, and has been the arbiter in nearly everything from education and morals to dress and social affairs during the greater part of the past four centuries and more. Christianity was introduced to the Tarascans by Franciscan friars, and the first convent was established at Tzintzuntzan in 1526. A church under the patronage of San Diego de Alcalá was built in Cocupao-Quiroga about 1534. This church was a *visita* of the Tzintzuntzan convent and there were no resident friars for a number of years. The date of erection of a convent (the terms *casa*, *convento*, and *monasterio* are synonymous) with resident friars is uncertain. None of the Franciscan chroniclers give dates for the *presidencia* or *vicaría* (a convent subordinate to a larger convent known as a *guardianía*) in Cocupao, although most of the religious historians imply that a convent existed in Cocupao from the first half of the sixteenth century. Since the inspector-general Ponce in 1586 spent a number of days in Tzintzuntzan, but made no mention of a Franciscan house in Cocupao, and since he proceeded northwestward around the lake from Tzintzuntzan to San Jerónimo Purenchécuaro, yet made no attempt to inspect Cocupao which was less than a mile off his route, we may conclude that the *presidencia* of Cocupao dates from after the Ponce inspection. We know practically nothing about church history and religious activities in Cocupao during the colonial period. Before the end of the sixteenth century Franciscan houses existed in Tzintzuntzan, Erongarícuaro, San Jerónimo, San Andrés, and Cocupao in the northern part of the lake basin; Santa Fe de la Laguna had been a secular rectorate since about 1534; secular clergy were in the neighboring parishes to the north and east (Tiríndaro–Coeneo, Huaniqueo, Teremendo, and Capula); and Augustinian convents were a short distance to the east and south in Santiago Undameo (Necotlán) and Tiripitio. Franciscan influence was dominant in the area until Tzintzuntzan was secularized in 1780 and Cocupao in 1786–87, and the region ceased to be a part of the Franciscan province of San Pedro y San Pablo de Michoacán (founded as a *custodia* in 1536, raised to a *provincia* in 1566). After secularization Cocupao continued to be a *vicaría fija* of the parish (*curato*) of Tzintzuntzan until 1853. The independent *curato* was set up to include the newly made Villa de Quiroga and the ranchos of Sanambo, Icuácato, Caríngaro, and La Tirímicua, and this is still the area of the Quiroga parish. Atzimbo and Zirandangacho apparently are considered to belong to Tzintzuntzan, although politically they are now a part o

Quiroga. Because of the relative importance of Quiroga it has been made the headquarters of a *vicaría foránea* which embraces the parishes of Quiroga, Tzintzuntzan, Santa Fe, San Jerónimo and San Andrés, Teremendo, and Capula. The priests of these parishes sometimes meet in Quiroga, and the Quiroga priest occasionally visits the constituent parishes. Quiroga and these other parishes fall within the archdiocese of Morelia or Michoacán. The diocese of Michoacán was organized 1534/36/38 with the see in Tzintzuntzan for the first few years, then in Pátzcuaro for about 40 years, and ever since 1580 in Valladolid-Morelia. In 1863–64 Morelia was raised to an archdiocese, with Querétaro, León, and Zamora as suffragan dioceses, and Tacámbaro was added in 1913. Quiroga is directly under the Archbishop of Morelia.

THE CHURCH

Nothing now remains of the original colonial parish church or of the Franciscan convent, which were destroyed when Cocupao was burned in 1811 to prevent its use by royalist troops. The present parish church (La Parroquia) which was built about 1812–18 retains the simple lines and limited ornamentation which characterize most Franciscan churches as contrasted with Augustinian and Dominican. What may have been an imposing bell tower was truncated on June 19, 1858, when the most severe historic earthquake in the region tumbled down the upper member, which never has been replaced. The church proper consists of a simple boxlike nave terminating in a polygonal sanctuary or apse, with the main front entrance giving to the south onto the churchyard or atrium (the former cemetery), and a more commonly used side entrance opening on the west onto the Plaza de los Mártires. Attached at the back is the parish house in which live the priest, the sacristan, and a housekeeper; and all along the east side of the church and the parish house is a structure with several rooms which are used for a variety of purposes connected with the religious life of the community. The outstanding element in the interior of the church is the painted wooden ceiling. The old wooden altars were replaced in the 1880's with conventional modern altars of stone and composition. Because of the sequestration and abandonment of the other churches and chapels in Quiroga, the parish church has a large collection of sculptured images (*bultos*) and paintings. The *bultos* were of:

San Diego de Alcalá—the patron saint, reputedly made in Italy, and easily the finest image in the church.
El Señor de la Preciosa Sangre—a reportedly miraculous image of Christ on the cross. This image is said to be made of maize cane paste (*caña de maiz*).
San Francisco de Asís—a quite good image of Saint Francis, possibly transferred from the chapel of the defunct Barrio de San Francisco.
San José.
San Antonio de Padua.
San Vicente de Paul—transferred from the chapel of San Vicente.
San Pascual Bailón.
Cristo Rey.
El Santo Entierro.
Jesús Nazareno.
Sagrado Corazón.
San Miguel Arcángel—transferred from the chapel of San Miguel.
Santa Teresita del Niño Jesús.
La Purísima Concepción.
Santa Ana.
María Santísima.
Nuestra Señora (the Virgin Mary) in the forms known as Carmen, Soledad, Dolores, Tránsito, and Peregrinos.

Among the more notable paintings were a fair painting of San Pablo (attributed by León to Cabrera), La Concepción, Nuestra Señora de Guadalupe, and 14 pictures representing the stations of the Via Crucis.

BELLS

The bells are reached by several flights of stairs up to a large chamber with a side door to the organ loft, then up a closely spiraled stairway or *caracol*, and finally up a short wooden ladder to the bell platform. There are seven bells of different sizes and ages. The largest bell (*campana mayor*) and three others were cast in Acámbaro in 1940 and 1941; two of intermediate size and uncertain origin date from 1901 to 1907; and the smallest bell carries the date of 1771. Bells no longer play the role in Quiroga and in most of the remainder of Mexico that they did for the major part of the past four centuries. Because of the lack of watches and clocks every parish church was supposed to have at least one bell large enough and in a tower high enough so that it could be heard throughout the parish—calling the congregation to church on Sundays and other feast days, indicating the hours of prayer, and serving as a swift messenger of tidings on such occasions as fire, bandit raid, or a call for public

assembly. A complicated "bell language" was developed to take care of the many periodic and special religious and secular calls. The first reduction in the use of bells was brought about by various anticlerical laws since 1859. In Quiroga the need for bells to indicate the time of day was eliminated by the installation of the town clock in 1895. Cheap watches, radio time signals, public order, newspapers, a reduction of religious fervor, and other factors have combined to reduce bell ringing to a mere echo of what it once was. Bells are rung at the discretion of the priest and, rarely, at the request of the *ayuntamiento*. The three Angeluses or *Avemarías* (*toque de alba* about 6 in the morning; *toque de las doce* at noon; and *toque de la oración de la tarde* about 6 in the evening) are not commonly rung excepting for the call to noon prayer, which consists of 12 strokes on one bell (on Sundays and feast days this is followed by a *repique* or series of peals). Apparently the *alba*, *doce*, and *oración* or *rosario* are indicated by ringing three strokes, pause, four strokes, pause, five strokes, pause, and one final stroke. A *misa cantada* or sung mass on Sundays and feast days is indicated by three calls or *llamadas* rung at about 15-minute intervals. These *llamadas* are initiated by three, two, or one stroke of the *campana mayor* (according to the time remaining before mass), and then a clamor of belfry bells and hand bells. An ordinary *misa rezada* or low mass is indicated by three *llamadas* of about 30 strokes or *campanadas* each followed by 1, 2, or 3 strokes. Quiroga, like most churches, has no high masses, since adequate personnel is lacking. In addition to the main calls to mass and prayer (which employ the larger bells), there are numerous minor calls of but a few strokes on one of the smaller bells which are addressed to particular segments of the population, such as the catechism classes and the members of the various confraternities or sodalities. Our general impression was that the bell language in Quiroga was quite abbreviated and corrupted; at least it differed quite a bit from usage we had observed in such other areas as Guerrero, Sinaloa, and Chihuahua. Undoubtedly a combination of local tradition or custom (differing among the Franciscans, Augustinians, Jesuits, regular clergy, et al.) and the personal bias of the curate conditions the nature of the vocabulary of the bell language from one parish to another. It would be most interesting to make a current comparative study in different parts of Mexico to determine (*a*) actual status of campanology, (*b*) differences from one part of the country to another, (*c*) relative use for religious and secular purposes, (*d*) influence of the different orders in regional differences, and (*e*) changes from the nineteenth century and from the colonial period. At present in Quiroga the chief secular use of the church bells is to ring the *queda* or curfew.

THE CLERGY

Owing to such factors as the authority of the church, the office of confession, and control of education for more than three centuries, the local priests have exerted a great influence for both good and bad in Quiroga. Local opinion concerning the church and the local curates varies greatly. The majority of the inhabitants are good Catholics who criticize neither the church nor the priests. However, a minority (chiefly the *ejidatarios* of El Calvario) claim that the priests have always been in league with the merchants and large landholders to keep the common people in ignorance and to take away their lands. In any case the curate has always been a highly influential person. Since the parish priests have been the principal molders of character and arbiters of society in Quiroga, it seems pertinent to provide a list of these men. Owing to the lack of the Franciscan archives we do not have the names of the various friars who served in Cocupao-Quiroga excepting Fray Lucas Rincón, who was *guardián* of the convent in 1774 and possibly was the last Franciscan in Cocupao. At the death of the last friar (about 1786) Cocupao was entrusted to a *teniente de cura* who represented the proprietary curate of Tzintzuntzan. The first secular curate of Tzintzuntzan was Manuel Gregorio González de Anzo, 1780–83, who was succeeded by Juan de Dios Malagón 1783–86, Dr. Gabriel Bartholomeo Gomes de la Puente 1786–87, and Gerónimo Sandí 1788–1804. These and nine later priests were the proprietary curates of Tzintzuntzan, Ihuatzio, and Cocupao until 1853 when Cocupao-Quiroga was erected into an independent *curato*. Despite the fact that the ecclesiastic historian Romero gives the date of 1853, a notation in the church records of Quiroga states that Quiroga was

erected as an independent parish in July of 1847. If this notation is correct** Juan de Dios Torres (who was *teniente de cura* beginning in September of 1842) was the first proprietary curate, July 1847 to April 1853 (see footnote 1 to list below). Other *curas* have been:

Rafael Acuña	1853–54.
Fr. Francisco Aguirre	1854–55.
Clemente Vilchis	1855.
Zeferino Sánchez	1855–56.
Rafael Acuña	1856.
Andrés Zannettini	1856.
José María Reyes	1856.
José Leonides Dávalos	1856.
José María Reyes	1857.
Blas León	1857.
José María Reyes	1857–59.
Pablo Ramírez	1859.
Jerónimo Hurtado	1859 .
Francisco N. de Medina	1859–60.
*Juan B. Menédez [1]	1860–65. (Preached against the civil register.)
Pablo Ramírez	1865.
*Porfirio Herrera	1865–68. (Preached against the republican government.)
**Francisco de Paula Plasencia.	1868–89. (Unified the town, developed charity, died as *cura* of Quiroga. Universally revered.)
Francisco Ponce	1889. (Curate of Santa Fe, temporarily over Quiroga.)
José María Villalobos	1889–90. (Born in Chucándiro.)
Francisco Ponce	1890. (Temporarily again.)
**Eucario Farías Herrera	1890–1901. (Born in Angangueo.)
**José Otilio Vivanco	1901–1913. Born in Santa Ana Maya. Constructed the chapel of San Vicente. Founded several religious organizations.)
Rafael García	1913–14.
Erasto Portillo	1914–16. (Born in Huetamo.)
*Francisco de Paula González.	1916–19. (Born in Celaya.)
Fabián Martínez	1919.
Rafael Lemus	1919–21. (Born in Pátzcuaro.)
Francisco Aguilera	1921.
**Catarino Vivanco	1921–30. (Born in Santa Ana Maya.)
Damián Alvarez	1930–31. Born in Pichátaro.)
Francisco F. Rubio	1931–35.
Gregorio Coronado	1935–36. (Born in Quiroga.)
**José Jesús Olivares	1936–. (Born in Tancítaro in 1880.)

[1] An asterisk has been placed before the names of the curates who were most influential in the life and affairs of Quiroga. Two asterisks indicate the priests who most conditioned life in Quiroga.

RELIGIOUS ORGANIZATIONS

The oldest secular or lay religious organizations were the hospital of the Indians and the associated *cofradías* or confraternities. Unfortunately the archives of the hospital cannot be located. Probably next in antiquity were the occupational guilds or *gremios*, which are nearly defunct even in the purely religious aspects. Quite ancient was the organization of the community into religious groups by *barrios*, and as late as the first half of the nineteenth century we find mention that the *barrio* of San Francisco paid the expenses of the Saturday masses. At present there is little left of such areal organization excepting a dichotomy of the town with respect to the ceremonies pertaining to the patron saint San Diego de Alcalá. Undoubtedly old, and with an unbroken history since some time in the colonial period, is the Third Order of Saint Francis (Venerable Orden Tercera de San Francisco) to which belong many of the leading citizens of Quiroga. During the second half of the nineteenth century several members of the *ayuntamiento* were removed because they were members of this order and refused to take the oath of office which implied carrying out anticlerical laws.

At present there is a variable number of lay religious organizations many of which last but a few years and then are replaced by other groups organized for some special purposes. Probably more than 90 percent of the adult population belong to one or more of these religious organizations. These groups go by various titles, such as sodality or confraternity (*cofradía* and *confraternidad*), brotherhood (*hermandad*), *asociación*, *congregación*, and *culto*. There is some confusion in the titles used by these pious associations and popular devotions and the titles used locally do not always agree with official church rulings and definitions. The following list contains the names of most of the organizations which have been active during the past 20 years. One asterisk indicates that the organization was active in 1945, and two asterisks mean that the organization is known to be more than a century old in Quiroga.

*Acción Católica.
*Adoración Nocturna.
*Apostolado de la Oración. (This is known in English as League of the Sacred Heart of Jesus.)
**Archicofradía del Inmaculado Corazón de María.

*Asociación or Congregación de las Hijas de María Inmaculada. (The Sodality of the Children of Mary.)
*Asociación de Madres de Familia.
*Cofradía de N. S. del Carmen.
**Cofradía de N. S. de la Concepción.
*Conferencia de San Vicente de Paul.
**Confraternidad or Devotos de la Preciosa Sangre de Cristo.
*Congregación (Niños y Niñas) del Catecismo.
*Culto Perpetuo de San José.
*Devotos de la Divina Providencia.
**Hermandad or Confraternidad de la Vela Perpetua.
**Mayordomía del Santo Patrón San Diego.
**Venerable Orden Tercera de San Francisco.

RELIGIOUS FESTIVALS

Quiroga has no outstanding religious festivals, ceremonies, or dances. Anticlericalism, the growth of a local agrarian group with atheistic or agnostic trends, comparative prosperity, and the lack of a truly Indian population, may explain this condition in part. However, apparently Cocupao-Quiroga never had a noted and widely attended festival or even a fair. Undoubtedly the comparative unimportance of Cocupao in colonial times, its subservience to Tzintzuntzan until only a century ago, and the presence of ancient and potent miraculous images or *bultos* in nearby Pátzcuaro and elsewhere in the region, combined to prevent the development of outstanding religious festivals in Quiroga. Judging from the religious festivals we saw from December to June (the period of the year which has the greatest religious activity) there is little that deserves special mention, and there is practically nothing which is unique. In the church all the days of the church calendar are fittingly observed, but very few of these days affect the tempo of life in Quiroga or result in public displays of fireworks, instrumental music, dances, pageantry, etc. Only some 6 or 8 days or periods are outstanding in the local religious calendar.

The Christmas Period.—From December 24 (Noche Buena) until January 6 (Día de los Santos Reyes) is a general time of relaxation and religious and secular celebration. December 24, December 25, January 1, and January 6 are the most important days. Fixed allegorical floats (*carros alegóricos fijos*) depicting events in the life of Jesus are set up; some individuals dress as the Wise Kings of the East (Los Reyes Magos); and there is some dancing and singing by groups representing the Reyes Magos and shepherds and shepherdesses (who are children). Also, in some homes a *piñata* (container filled with candies and other goodies, hung from the ceiling) is displayed for a time; then it is broken and a scramble for the contents ensues. Private and public dances are common in this period, and fireworks are set off in the churchyard on several of the days.

Holy Week.—The Semana Santa, from Palm Sunday to Easter Sunday, is a period of intense religious devotion enlivened chiefly by the dances of the Moros y Cristianos, and the attire of so-called "Jews" (men dressed as women).

May, the Month of Mary.—In this month commonly a number of pious associations, guilds, and individuals defray the expenses of mass and church decorations (candles and flowers) on specified days. In May of 1945 the groups represented (not including private individuals) were:

May 1, Devotos de la Divina Providencia.
May 3, Cargueros del Santo Patrón San Diego.
May 6, Devotos de la Preciosa Sangre.
May 8, Congregación de Hijas de María Inmaculada.
May 10, Hermandad, de la Vela Perpetua.
May 11, Asociación de Madres de Familia.
May 12, Superiores y Alumnas del Colegio Guadalupana.
May 17, Venerable Orden Tercera de San Francisco.
May 19, Niños y Niñas del Catecismo.
May 20, Gremio de Panaderos.
May 28, Gremio de Obrajeros.
May 30, Gremio de Zapateros.

May 1, 2, 3.—On these three days the *cargueros* of the patron saint San Diego (men who are responsible for the program and much of the expense of the celebrations on the day of the patron saint, November 13) for the new year are changed or installed. There are two sets of *cargueros*—one for the upper town (El Calvario district in general), and another for the lower town. Each set consists of a *capitán*, an *alferez*, and a *sargento* (all terms of military rank). During these days there is much playing on *chirimías* (a type of flute), beating of drums, displaying of flags, and setting off of rockets and firecrackers. Coincidentally, May 1 is the day of Saints Philip and James, and it is also Labor Day, so little work is done, many firecrackers are set off, and much liquor is consumed. May 3 is the day of the Holy Cross, and that evening a large cross is outlined by many bonfires on the slope leading up to the Cerro de la Cruz. These fires formerly were of pitch pine, but now pieces of rubber tires are the chief fuel. This is a specially important

day for the Pueblo Nuevo district of Quiroga adjacent to the Cerro de la Cruz.

Corpus Christi.—In many respects this is the most interesting festival in Quiroga. The fiftieth day or 7 weeks from Easter is Pentecost or Whitsunday, and a week later is Trinity Sunday. On Trinity Sunday there is much shrilling of *chirimías*, beating of drums, and setting off of firecrackers. During the next 3 days preparations are made for Corpus Christi on the following Thursday. The most apparent changes in the landscape are the lines of colored paper streamers hung over the main streets, and the arrangements in the churchyard and the Plaza de los Mártires. Three henequen ropes are stretched between trees, and suspended on each rope is a catherine wheel or *rueda grande*. Each catherine wheel is an open framework of wooden rods, canes, and cords, about 6 feet in diameter and 2 feet wide, on each side of which are about 480 firecrackers or *bombas*, which are connected by a continuous fuse. Each *bomba* consists of a section of hollow cane about 4 inches long, explosive filler, paper and henequen cord used to wrap and tie it into its place on the wheel. When ignited the catherine wheels go off with the roar of a machine gun and a dense pall of gray-black smoke soon hides the rotating wheels from view. The wheels are made in Quiroga, and each one took three men about a week to complete. In addition to the wheels in the churchyard, numerous strings of firecrackers are strung between and around trees. In the Plaza de los Mártires an aisle is marked off from the side entrance of the church to the Calle Nacional by erecting two barriers of rope and criss-crossed cattails, and one or more orchids are tied at every intersection of the cattails. In addition to the Flor de Corpus orchids on the barriers there are hundreds more in festoons above the church entrances, and altogether there must be used more than 2,000 orchids in the Corpus Christi celebration. All day long and far into the night of the day before Corpus Christi (May 30, in 1945), there was the sound of *chirimías* and drums and the explosion of firecrackers. On Corpus Christi the flutes and drums were reinforced by four bands and orchestras from Ihuatzio, Santa Fe, San Jerónimo, and Teremendo. The musicians played and firecrackers were exploded sporadically throughout the day, but the real celebration did not commence until afternoon. About 1:30 an orchestra and several *batea* dancers congregated in the municipal palace where they gossiped and rehearsed. This probably is not a normal occurrence, but in 1945 the *presidente municipal* was a *batellero*. The *batea* dancers were several young *batelleros* (apparently in their late teens) attired in normal holiday dress (best "straw" hat, store pants, shoes, colored blouse, serape), each with a *huacal* (framework of pine slats) on his back. Entwined with the framework of the *huacal* were ash leaves, orchids, and bougainvillea, and upon this background were eight or nine finished *bateas* and various items symbolic of the life and food of the *batelleros*. A common assortment contained three yellow chiles, one to three onions, a honeycomb or nest (*panal*) of the little black wild bee, a *huaje* (gourd for water), a strip of dried meat, and one or two *chichonas* (a bread made for Corpus Christi and the festival of San Diego, in the shape of an eight-pointed star with small protuberances or tits). The principal events of the day took place between 5 and 7 in the evening. First was the *rosario* or afternoon prayer in the church. This was followed by fireworks in the churchyard (catherine wheels, strings of firecrackers, giant firecrackers, and skyrockets). Next, about 6:30 p. m., was the much abbreviated Corpus Christi procession, which under the present laws should not make use of public streets. In Quiroga an open-air procession "within the law" was obtained by leaving the church through the side entrance, and winding around over and along the Plaza de los Mártires and the adjacent churchyard, and going back into the church by the main entrance. The procession route was marked by two rows of women holding candles. The order of the procession was: three boys in vestments of red, carrying a cross and two large candles; two drummers and one flutist; men carrying several huge candles preceding the image of San Diego on a handled platform decorated with seasonal fruits, orchids, and *chichonas* around the base of the image; an arch festooned with fruits and *chichonas*; and finally the *batea* dancers. After the procession thick flat breads were thrown down to the crowd by boys in the belltower. This was followed by the dance of the *batelleros* before the side entrance of the church. These *batea* dancers, in two groups, danced a simple Indian jogging step to the music of an orchestra. Because of

poor visibility due to the crowd and because of our own incompetence in such matters, our notes on the steps and the music are not worth reproducing. After this dance many little crude *bateas* were distributed among the audience. The final event was the gift of fruits and other local products to the curate. Altogether the Corpus Christi celebration preserves more of the spirit or atmosphere of the colonial period than any other still extant in Quiroga. The dance of the *batelleros* and the giving away of the miniature *bateas* serve to accentuate the former importance of *batea* making in Cocupao-Quiroga; and the giving of fruits and other items to the curate at this time is a retention of an ancient and wide-spread custom. However, many of the customs (described by Escobar and other colonial authors in Michoacán) have disappeared here, although retained in varying degree in a number of more Indian communities. Among these customs are such as displaying numerous elements of the flora and fauna, execution of masked dances, and display by all artisans of their wares in the plaza and the giving away of examples.

The other important festivals we did not observe. These are: Michaelmas or the Día de San Miguel on September 29 (especially important to the inhabitants of the ex-*barrio* of San Miguel), at which time there is much music, fireworks, and consumption of a special dish known as *pozole batido;* the fiesta of Cristo Rey on the last Sunday in October; and the great festival of the patron saint San Diego on November 13 and through an entire week, at which time there are dances of the Moros y Cristianos, costumes of great variety, and much music and fireworks. The other religious festivals are celebrated principally within the church, and only a few are accompanied by music, fireworks, dances, and other exterior displays. Among the lesser festivals of some importance are La Purificación de María or Candelaria (Candlemas) on February 2; Martes de Carnaval (Shrove Tuesday) and several days preceding; San José on March 19—the barn swallows are supposed to return on this day; Ascension Day, which in 1945 coincided with Mother's Day on May 10; San Isidro, May 15; San Juan Bautista, June 24; San Pedro y San Pablo Apóstoles, June 29; Preciosísima Sangre de Nuestro Señor, July 1; San Vicente de Paul, July 19; Santiago el Mayor, Apóstol, July 25; La Asunción, August 15; San Bartolomé Apóstol, August 24; Nuestra Señora de los Remedios, September 1; San Nicolás Tolentino, September 10 (chiefly in Santa Fe); San Francisco de Asís, October 4; Vigilia de Todos Santos to Día de los Muertos, October 31 to November 2; Purísima Concepción December 8; Nuestra Señora de Guadalupe, December 12; and Día de los Inocentes (All Fools Day) December 28. There is not much celebration of national patriotic holidays. The most important of these are the Grito de Dolores and so-called independence day September 15–16; May 5, commemorating the victory over the French at Puebla in 1862; February 5, celebrating the constitutions of 1857 and 1917; the Día de la Raza, October 12; and November 20, celebrating the Commencement of the Madero Revolution in 1910.

RELIGIOUS ATTITUDES

We made no attempt to ascertain the religion of the people in Quiroga since such questioning would have aroused needless antagonism. According to the census of 1940 all the inhabitants of the ranchos were Roman Apostolic Catholics, as were all but 55 persons in Quiroga town. These 55 persons (49 of whom were in the Calvario district) were listed as having no religion. Actually the census returns are not reliable since it is commonly assumed that everyone is a Roman Catholic. We noticed some of the original census schedules in which the column for religion had been filled out completely as *Católico* although there were not enough people in the censused unit to complete the schedule—which revealed the bias of the census taker. Probably there is a somewhat greater number of people (perhaps as many as 150) who should be listed as without religion since nearly all of the *ejidatarios* and their families are outside of the "pale" of good orthodox Roman Catholics. However, these individuals were raised as Roman Catholics and in terms of actual beliefs probably are as much Roman Catholics as most of the individuals who go to mass and confess. These people are anticlerical rather than anti-Catholic. There are no Protestants, Jews, or members of other faiths, although possibly two or three individuals might qualify as confirmed atheists. There are no pagans, and the retention of primitive pagan Indian beliefs and superstitions is probably no more than the amount of pagan superstition that is current among

Christians in many other parts of the world. Unfortunately, we did not have the time to investigate the folklore of Quiroga. From what we saw and heard, local beliefs seemed to represent a mixture of European and Indian elements, but often it was impossible to identify the origins. There is some belief in witches, but this could be either European or Indian in origin, and actually seems to contain elements from both sources. A considerable number of animals enter local folklore, among which we might mention the owl, which is considered a bird of ill-omen, and the rattlesnake, which is feared and respected for more than just its potent poison. If one sneezes in a crowd there will be heard a chorus of "Jesús, María, José." A few houses have "horse shoes" above the doors, and a considerable number of houses have one or more crosses on the roof for protection against lightning. In comparison with many parts of Mexico, there are remarkably few crosses along the roadsides, in the mountain passes, and on the hilltops. In summary, the people of Quiroga seem to be predominantly devout God-fearing Catholics whose theology is best represented by a bloody Christ on the cross, and the Virgin Mary in such guises as Our Lady of Sorrows, Our Lady of Succor, and the like. Here the Christian religion is one of pain and sorrow, under the constant shadow of death, but paradoxically relieved by the lighthearted music, dancing, fireworks, and drinking that commonly accompany so many of the religious festivals.

BAPTISMAL NAMES

The use of first names, forenames, or given names, goes back to great antiquity. The practice, developed during the first centuries of Christianity, of combining baptism and the giving of a forename with Christian associations has given rise to the term "baptismal name" (*nombre de pila*) or so-called Christian name. Such usage became almost universal within Christendom when Pope Gregory the Great urged the use of only given names with Christian antecedents; and such usage was stressed by Cardinal Jiménez in Spain, and by the Council of Trent for all Roman Catholics. Consequently, from the time of the Spanish Conquest of Mexico to the present time, all Europeans, mixed bloods, and converted Indians and their descendants have baptismal names of the generalized Christian type. This type includes not only saints but also certain ancient heroes such as Romulus, Caesar, Hannibal, Alexander, and the like. In connection with saints' names, it must be kept in mind that comparatively few saints of the Christian church have received formal canonization at Rome. During the medieval period popular veneration and the approval of the local bishop were sufficient basis for considering any given individual as a saint. Consequently the various calendars of saints issued in different Roman Catholic countries and areas differ widely as to individuals included and excluded.

In Mexico, and specifically in Michoacán, certain trends can be noted. In general the lists of saints approximate those current in Spain. The most popular source of names in Mexico during the independence period has been the *Calendario Galván*, with its lists of feast days, patron saints, and the general list of saints. Locally, the parish priests and their personal likes and dislikes have conditioned the choice of baptismal names. On a larger scale, the various missionary orders have exerted great influence. Each order has its favorite saints, whose names were widely used in baptizing the Indians, and in the selection of patron saints for churches, convents, hospitals, and communities. Quiroga and the surrounding area was under the Franciscans from the 1520's until nearly the end of the colonial period. Naturally, such Franciscan saints' names as Francisco, Antonio, and Luis, were widely used. Apparently there was some influence from the Augustinian area a few miles to the southeast, and from the Jesuits in Pátzcuaro. However, of greatest importance were the baptismal names of general Christian usage; i. e., derived from Jesus the Christ, the remainder of the Holy Family, the sainted apostles, the archangels, the early Christian Fathers, and various events and personages of the whole Bible. The relative importance of these various types of Christian names will be discussed after the names actually used in the Quiroga area have been presented. Although often an individual might be given the name of one of the saints of the day upon which he was born, such practice was not true in the majority of the cases studied. As a result, most individuals celebrate two "birthdays"—their actual birthday or *día de cumpleaños*, and their saint's day or feast day of the saint after whom they were named. There was noted some tendency to name

children after the parents, and a greater tendency to name children after grandparents and after uncles and aunts. However, often these apparent trends represented merely the small range of selection afforded by the most popular names, such as José, María, Jesús, and the like.

MALE BAPTISMAL NAMES

To obtain the distribution and incidence of baptismal names we used the 1940 census of Quiroga and its ranchos. There were listed 1,952 males who possessed 342 different names. Possibly the number of different names actually is somewhat smaller since a number of variations of a name may have been introduced by the personal idiosyncrasy in spelling on the part of the census taker or of the informants. Examples are such names as Amado and Amadeo, Basilo and Basilio, Deodoro and Diodoro, etc., although in many of such cases the variant spellings have become accepted as different names. Again, there are variant forms that actually are derived from different saints, although the names were derived from a common ultimate source. Examples of this type include such names as Apolinar and Apolonio, Aurelio and Aureliano, Crescencio and Crescenciano, and Maximo, Maximino, Maximiano, and Maximiliano. The most common male given name is José (Joseph), which was recorded 115 times. Actually, the incidence of José is much greater, since 84 individuals used José in combined names such as José Jesús, José María, José Guadalupe, and the like. Since José is such a common name, it is frequently followed by a second name which becomes the name most commonly used for the sake of distinction. Often, in such a connection, the José is abbreviated to "J.," and the name will appear as J. Trinidad Sánchez, or J. Luis Torres, and the like. Quite often the baptismal name José will be dropped completely, and the original possession of the name can be determined only by consultation of the civil and parish registers. The number of such cases is unknown to us. However, it can be assumed that practically everyone who uses such first names as Jesús, María, Guadalupe, Encarnación, Carmen, Concepción, Cruz, Dolores, Refugio, Salud, Santos, Socorro, Soledad, Tránsito, and Trinidad, was baptized with an initial José. It will be noted that this group of names is composed of attributes of the Deity, events in the life of the Savior and of the Virgin Mary, and the like. The second most used name is Jesús, which appeared alone 106 times, and preceded by José 31 times. Presumably, however, all individuals with the name Jesús were baptized José Jesús. We understand that the Roman Catholic church in Mexico is trying to discourage the use of Jesús as a baptismal name. When the abbreviation "J. J." is encountered, as in J. J. Valdés, it invariably stands for José Jesús, in just that order.

In the following tabulation are given the most popular names in Quiroga as of 1940. The number after each name is the incidence of that name in Quiroga. Where a second figure also is given it

Male baptismal names

1. José	115+84	42. Fidel	8
2. Jesús	106+31	43. Ignacio	8
3. Luis	77+6	44. Refugio	8+1
4. Diego	73	45. Rodolfo	8
5. Francisco	64	46. Tomás	8
6. Rafael	63+1	47. Adolfo	7
7. Salvador	59	48. Basilio	7
8. Antonio	58	49. David	7
9. Juan	51	50. Marcelino	7
10. Pedro	49	51. Marcial	7
11. Manuel	47	52. Marcos	7
12. Ramón	34	53. Primo	7
13. J. Jesús	31	54. Alberto	6
14. Miguel	31	55. Carmen	6+4
15. Leopoldo	25	56. Eduardo	6
16. Trinidad	21+3	57. Fernando	6
17. Isidro	16	58. Indalecio	6
18. Carlos	16	59. J. Luis	6
19. Felipe	15	60. Lázaro	6
20. Guadalupe	15+9	61. Porfirio	6
21. Santiago	15	62. Samuel	6
22. Alfonso	14	63. Socorro	6+1
23. Enrique	14	64. Arnulfo	5
24. Gregorio	14	65. Bonifacio	5
25. Joaquín	14	66. Eliseo	5
26. Vicente	14	67. Encarnación	5+5
27. Ismael	13	68. Evaristo	5
28. Nicolás	13	69. Gabriel	5
29. Daniel	12	70. Genaro	5
30. Andrés	11	71. Isidoro	5
31. Arturo	11	72. Javier	5
32. Lorenzo	11	73. Jorge	5
33. Ricardo	11	74. J. Encarnación	5
34. Agustín	10	75. Julio	5
35. Alfredo	10	76. Justo	5
36. Ángel	10	77. Melchor	5
37. J. María	10	78. Odilón	5
38. Leonardo	10	79. Otilio	5
39. Florentino	9	80. Pablo	5
40. J. Guadalupe	9	81. Roberto	5
41. Felix	8		

stands for the incidence of that name in combination with another name; e. g., José 115+84 means 115 cases of José alone and 84 cases in combinations, and Luis 77+6 means 77 cases of Luis alone and 6 times combined with José.

The incidence of the remaining names was: 22 names, four persons; 45 names, three persons; 78 names, two persons; and 125 names, one person. José, in all combinations, comprised a trifle more than 10 percent of the male population. The first 12 names listed covered more than 40 percent of the males; and the first 21 names comprised a little more than one-half of the male population of Quiroga. It will be noted that there is a decided break between the sixteenth- and seventeenth-place names, and that each of the first 16 names, plus Guadalupe, comprises 1 percent or more of the males.

COMPARISONS

An attempt was made to determine if there have been any important changes in the popularity of the various baptismal names since colonial times. For lack of extensive lists of Quiroga baptismal names during the sixteenth century, we examined the names of 1,579 males mentioned in O'Gorman's (1945) Catálogo de Pobladores de Nueva España. These males were distributed among 99 baptismal names. The first 5 names (Juan, 277; Pedro and Pero, 160; Francisco, 134; Alonso, 112; and Diego, 104) comprised approximately half of the males. The first 16 names (the above 5 plus Luis 62, Antonio and Antón 58, Gaspar 40, Cristóbal 39, Hernando, Fernando, and Hernán 59, Martín 36, Melchor 26, Miguel 25, Rodrigo 24, Gonzalo 20, Jerónimo 18) covered more than three-fourths of the males. Other names, in order, were Alvaro, Baltasar, Bartolomé, Sancho, Andrés, Jorge, Carlos, Sebastián, Bernardino, Gregorio, Manuel, Ruy, García, Gabriel, Felipe, Marcos, Tomás, Agustín, Lorenzo, Santiago, Leonardo, Blas, Domingo, Guillén, Mateo, Esteban, Felix, Gil, and Lope—which includes the top 45 names and all with an incidence of 5 or more.

Comparison of the two lists shows great differences. In the sixteenth century there was much less variety than at present. Jesús was not used at all in the sixteenth century; and José was not used in that form although there were 4 Joseph, and 1 each of Josepe and Jusepe. Names found in the top 16 of both lists were Juan, Pedro, Francisco, Diego, Luis, Antonio, and Miguel. In addition to José and Jesús, Rafael, Salvador, Ramón, Leopoldo, Trinidad, Isidro, and Guadalupe (from the first 20 on the 1940 list) were completely absent or were not in the first 45 names on the sixteenth century list. On the other hand, from the top 20 in the sixteenth century list, Gaspar, Cristóbal, Fernando, Martín, Melchor, Rodrigo, Gonzalo, Jerónimo, Baltasar, Alvaro, Bartolomé, and Sancho were absent from the top 50 or were completely lacking on the 1940 list. Clearly the trend has been to minimize the old Hispanic given names (such as Hernando, Rodrigo, Gonzalo, Alvaro, Alonso, Sancho, Ruy, García, and the like), and to stress certain Christian religious first names (such as José, Jesús, Rafael, Salvador, Manuel, Trinidad, etc.). This trend probably was brought about by the Franciscan missionaries working among a people with no European traditions. Also, the Franciscans were the leading protagonists for festivals and cults commemorating the Holy Name of Jesus, St. Joseph, and the Blessed Trinity. Another factor involved was the fact that among the Spanish immigrants there were relatively few farmers, fishermen, carpenters, bakers, and members of other such lowly occupations, since these occupations were held in New Spain chiefly by the Indians and by the mestizos. Consequently, it was chiefly in these two groups that baptismal names derived from the patron saints of these occupations (Isidro, Andrés, José, Nicolás, et al.) were common.

Another list was compiled of the baptismal names recorded in the civil register during the years 1941–44. There were 402 names of male infants. It was thought that a comparison of this list with that of 1940 would indicate if the present comparative liberalism and anticlericalism had extended to Christian names. The leading 22 names, in order, were José, Rafael, Antonio, Luis, Salvador, Jesús, Diego, Ramón, Manuel, Leopoldo, Francisco, Isidro, Guadalupe, Pedro, Miguel, Rubén, Juan, Nicolás, Carlos, Raul, Roberto, and Carmen. This order, and the percentages involved, showed no important changes or trends, unless it might be a slight lessening in the use of Jesús, Diego, and Francisco. The baptismal names of 226 fathers of children born in 1945 were, in order, Jesús, Salvador, José, Diego, Manuel, Rafael, Pedro, Antonio, Luis, Leopoldo, Juan, Alfredo, Agustín, Felipe, etc., in descending

order. This list offers nothing new, but stresses the decline of Francisco.

From a study of the complete lists of names, it is apparent that there is very little tendency to name children after local heroes, presidents, motion-picture stars, and similar personages. For example, there apparently was no rise in the proportion of such names as Lázaro and Manuel during the presidencies of Lázaro Cárdenas (a native of Michoacán) and Manuel Avila Camacho. However, most of the persons named Porfirio were born during the rule of Porfirio Díaz, and all of the persons named Adolfo were born since 1933. These two instances are not very significant since the absolute number of cases involved is very small. We can conclude that the customs involving the baptismal names of males have altered very little since records began for Quiroga, and that the Roman Catholic Church and the Franciscans have been the most important factors in determining the popular names, as well as practically all of the other names in vogue. This contrasts decidedly with the situation in the United States. According to a study made some 15 years ago (Loughead, 1934) the most popular male names in the United States (in order) were: William, John and Jack, James, Charles, George, Edward, Frank and Francis, Fred and Frederick, Harry and Henry, Joseph, Tom and Thomas, and Robert. William is the name of about 8.6 percent of American males; more than one-third of the males in the United States possess one or another of the first 5 names listed; and the entire 12 names comprise about 54 percent of the United States male population. Nearly half of our presidents (14 out of 32) have had these names, and all of the kings of England since before the discovery of America had names from this group. In sixteenth-century England the top 12 names were John, William, Thomas, Richard, Robert, Edward, Henry, George, Francis, James, Nicholas, and Edmund. About half of the 12 names can be considered biblical or with strong religious connotations (John, James, George, Joseph, Thomas, and possibly Edward), while among the top 12 names in Quiroga only Ramón might not be so considered. We have decided vogues of naming children after movie stars, presidential candidates and presidents, and other ephemeral notables. Furthermore, there has been a great decline, in the United States, in the use of baptismal names selected from the Bible. A few generations ago such names as Abraham, Daniel, Joshua, Reuben, Samuel, and Zachary were far more common than now.

FEMALE BAPTISMAL NAMES

The female baptismal names were studied in the same fashion as the male names. In the 1940 census Quiroga and its ranchos had 1,947 females who possessed 318 different names. The number of different names actually is somewhat smaller, since such names as Paula, Paulina, Paublina, and Pabla are obviously derived from a common source, as are many others, such as Felisa, Felicitas, and Feliciana. We have considered certain variant forms as the same name because the slight change in orthography is more apparent in the way the census taker or the clerk of the civil register has spelled the name than in the local pronunciation of the name. Among such variants, which we considered as one name, are: Amalia and Amelia, Catalina and Catarina, Elena and Elana, Emilia and Emelia, Ester and Esther, Sara and Sahara, etc. The most common female given name is María, which appears alone in 127 cases and in combination 187 more instances. What was said of José holds true for María. Since it is an exceedingly common name, quite often the María portion is used only on formal occasions, and the individual commonly will be known as Guadalupe, Carmen, Salud, Jesús, Concepción, etc. In many cases the María is lost shortly after baptism and is not used on any occasion. Probably several scores of individuals who are listed only with such names as given above were baptized with an initial María. It is likely that technically or legally at least half of the females in Quiroga possess the name María. When abbreviated, María appears as "Ma.," and this usage is quite common. In second place is Guadalupe or María Guadalupe; and the third place is held by Carmen or María del Carmen. Among women Jesús and María Jesús are far less popular than Jesús and José Jesús are among the males. We noted two instances of females with names which commenced with the initial "J." (J. Ignacia, and J. Socorro). In these cases the "J." probably stands for Jesús and not for José, as is invariably true among the males.

In the following tabulation are listed, in order, the most popular female baptismal names in the Quiroga area. If only one number appears after

the name, that name was found only in the simple form. A second number indicates the number of cases in which that name appears in combination with some other name, most commonly with María, and in a few instances with Ana, Jesús, and Luz.

Female baptismal names

1. María	127+187	49. Ana	10+1
2. Guadalupe	73+14	50. Aurelia	10
3. Carmen	53+18	51. Ignacia	10+1
4. Teresa	53+2	52. Julia	10
5. Juana	50	53. Leonor	10
6. Salud	48+15	54. Melania	10
7. Consuelo	42+1	55. Anita	9
8. Esperanza	37	56. Carlota	9
9. Ma. Jesús	36	57. Mercedes	9+4
10. Jesús	35+38	58. Paula	9
11. Ester	27+1	59. Rosario	9+2
12. Josefina	27	60. Tránsito	9
13. Sara	25	61. Virginia	9
14. Concepción	24+15	62. Clotilde	8
15. Antonia	23	63. Gracia	8+1
16. Josefa	23	64. Ramona	8
17. Margarita	22+1	65. Refugio	8+1
18. Luisa	22+11	66. Rosa	8+1
19. Dolores	21+7	67. Zenaida	8
20. Francisca	21+2	68. Amparo	7
21. Soledad	21+4	69. Angelina	7
22. Isabel	19+6	70. Celia	7
23. Socorro	19+7	71. Irene	7
24. Diega	18+2	72. Librada	7
25. Ma. Carmen	18	73. Ma. Dolores	7
26. Ángela	17	74. Natividad	7
27. Petra	17	75. Susana	7
28. Catalina	17	76. Victoria	7
29. Amalia	16	77. Delfina	6
30. Elena	16	78. Eulalia	6
31. Luz	16+1	79. Genoveva	6
32. Trinidad	16+11	80. Jovita	6
33. Aurora	15	81. Lucía	6
34. Ma. Concepción	15	82. Ma. Isabel	6
35. Ma. Salud	15	83. Ma. Socorro	6
36. Ma. Guadalupe	14	84. Marcelina	6
37. Rafaela	14	85. Nicolasa	6
38. Beatriz	13	86. Tomasa	6
39. Emilia	13	87. Abigail	5
40. Elvira	13	88. Adelaida	5
41. Herminia	13	89. Elisa	5
42. Magdalena	13	90. Enedina	5
43. Lorenza	12	91. Gregoria	5
44. Ma. Luisa	11	92. Herlinda	5
45. Ma. Trinidad	11	93. Matilde	5
46. Ofelia	11	94. Micaela	5
47. Raquel	11	95. Modesta	5
48. Agustina	10	96. Natalia	5
		97. Rita	5
		98. Sabina	5

The incidence of the remaining names was: 21 names, 4 persons; 19 names, 3 persons; 62 names, 2 persons; and 125 names, one individual. María, in all listed combinations, comprised about 16 percent of the female population. The first 12 names (including Ma. Jesús, but no other combinations with María) covered somewhat more than 31 percent of the females; the first 21 names comprised a little more than 41 percent; and the top 32 names comprised approximately one-half of the females. It will be noted that, although the male and female populations are comparable, and though there are a few more male names than female, there is a greater dispersal of females in the names having an incidence between 5 and 10 persons.

COMPARISONS

Comparisons with sixteenth-century female baptismal names are not reliable, since we obtained only 32 names covering 231 women from the Catálogo de Pobladores de Nueva España. (O'Gorman, 1945). The leading names were María, Isabel, Francisca, and Ana, which comprised more than half of the women mentioned. Other names, in order, were Catalina, Juana, Leonor, and Beatriz, which, with the first 4, comprised more than three-quarters of the women listed. From this scanty material it seems that only María and Juana have maintained their ancient rank, although all eight sixteenth-century names are represented among the first 50 in Quiroga as of 1940. The outstanding development is the addition of the strictly religious Christian name of the type exemplified by Guadalupe, Carmen, Salud, Consuelo, Jesús, and the like. This accords with the trend determined for male names.

Other comparisons are afforded by the study of the 323 girls born during the period 1941–44, and the names of the 226 women who were mothers in 1945. In the following tabulation we present the leading names for all females in 1940, females born 1941–44, and mothers in 1945:

Census of 1940	1941–44 births	1945 mothers
1. María	Ma. Guadalupe	María.
2. Guadalupe	María	Juana.
3. Carmen	María Salud	Ma. Jesús.
4. Teresa	Margarita	Ma. Guadalupe.
5. Juana	Ma. Socorro	Ma. Carmen.
6. Salud	Ma. Carmen	Ma. Concepción.
7. Consuelo	Josefina	Esperanza.
8. Esperanza	Sara	Francisca.
9. Ma. Jesús	Ma. Jesús	Ma. Salud.
10. Jesús	Ma. Teresa	Ma. Teresa.
11. Ester	Esperanza	Ma. Dolores.
12. Josefina	Luisa	Ma. Socorro.

There is apparent very little change. The absence of simple Carmen, Guadalupe, and Jesús in the last two columns represents merely the more meticulous attention to detail of the secretary of the civil register than that exercised by the census takers. Possibly Juana is being replaced by Margarita in the youngest generations, but all names from the 1941–44 and 1945 lists are to be found among the more common names in 1940. As was mentioned for the male names, there is apparent very little tendency to name females after popular movie stars, heroines of novels, and the like. The female names of Quiroga can be compared with those in the United States, where presumably the most popular names are Mary, Annie and Ann, Margaret, Elizabeth and variants, Catherine, Sarah, Nellie, Frances, Lillian, and Rose.

ANALYSIS OF GIVEN NAMES

FEMALE NAMES

Female given names fall more readily into classes than do the names of males. The most important class includes all names derived from Mary the Mother of Jesus the Christ. During the past 12 centuries the cult of Mary the Mother of God has ramified enormously within Christendom. This has been most apparent within the Romance or Latin Roman Catholic countries, and especially during the past four centuries. An outstanding development has been the great increase in the festivals and popular devotions concerned with Our Lady (Nuestra Señora) in her various associations, attributes, special shrines and effigies, etc. Biblical and apocryphal events and more recent events and apparitions have given rise to dozens of manifestations of Mary the Great Intercessor. These various impersonations, aspects, representations, avatars, advocations, or manifestations of Mary are the source of a majority of Christian female names in Quiroga and probably throughout Mexico and Latin America. The most important is María (Mary) herself; followed by (María) Guadalupe—associated with a shrine in Spain, and with the leading shrine in Mexico, at the site of the apparition of the Brown Virgin, patroness of Mexico and of Latin America. In third place is (María del) Carmen—associated with the festival of Our Lady of Mount Carmel. Other leading forms include María as Nuestra Señora of: Health or Salvation (Salud)—associated with the most miraculous *santo* in the Pátzcuaro Basin, that of N. S. María de Salud in a Pátzcuaro temple; Consolation (Consuelo); Hope (Esperanza)—connected also with the nearby shrine of N. S. de Esperanza in Zamora; Jesús—Mary as the Mother of Jesus or God; Immaculate Conception (Concepción)—associated with the patroness María Santísima, N. S. de la Purísima Concepción, of all Indian hospitals in Michoacán including the church of the former hospital in Quiroga; Sorrows or Dolours (Dolores); Soledad—connected with the shrine of N. S. de la Soledad in Mexico City; Help to Christians and Perpetual Succour (Socorro); Light (Luz), probably influenced by the shrine to Nuestra Madre de Luz in León of Guanajuato State; Mercies (Mercedes); the Holy Rosary (Rosario)—based on the prayers for victory at Lepanto in 1571; Translation or Assumption (Tránsito); the Blessed Virgin Mary (Virginia); Grace (Gracia); Refuge for Sinners (Refugio)—associated with the shrine of N. S. del Refugio in Puebla; Protection or Favor (Amparo); Nativity (Natividad); Victory at Lepanto (Victoria); Peace (Paz); Prodigies (Prodigios); Pillar (Pilar)—from the shrine in Saragossa; Purity or Piety (Piedad); Purification or Candlemas (Candelaria); Miracle of the Snows (Nieves); etc. Such forms, and María in combination with such names as Teresa and Luisa, comprise the names of at least one-half of the females in the Quiroga area.

A second class comprises names that are essentially the feminine equivalent of the names of masculine saints. Occasionally they are saints' names in their own rights. The leading representatives of this class are Juana, Josefina and Josefa, Antonia, Luisa, Francisca, Diega, Petra, Rafaela, Lorenza, Agustina, Ignacia, and Julia. Closely related, and not far behind in representation, is the class containing noted female saints. Santa Teresa, possibly the greatest Spanish female saint, has given her name to the greatest number. Far behind are such as Margarita, Catalina, Amalia, Elena, Beatriz, Emelia, Herminia, Aurelia, and Melania. A fourth class is made up of biblical names, commonly considered as saints. Examples of this class are such names as Ester, Sara, Isabel, Raquel, Magdalena, Ana and Anita, Susana, and Abigail. A fifth class includes such as Ángela and Angelina, Trinidad, Aurora (from a mass on Christmas Day), Cruz, Sacramento, and Gloria (stressed in the Doxology)—all per-

taining to religious concepts and ceremony. In addition, there are scattered representatives of such classes as pagan goddesses (Elvira), qualities and substantial concepts (Ofelia, from the Greek for "benefit"), a romantic Tarascan heroine (Eréndira), etc.

MALE NAMES

No one source dominates the male Christian names as does Mary among the female names. However, Mary's counterpart and husband Joseph (José) does rank in first place with about one-tenth of the total. This is undoubtedly the work of the Franciscan friars, who also espoused the cults or devotions and festivals of the Holy Name of Jesus and of the Blessed Trinity. Although Jesús is in a strong second place, the names belonging to the Saviour group do not bulk importantly. The other names of this group include Salvador, Manuel, Trinidad, Domingo, and Ascención. Possibly there should be included the reputed names and titles of the Three Wise Men—Melchor, Santos, Gaspar, Reyes, and Baltazar (this last name is not current in Quiroga excepting as a surname). All of this group comprise only about 15 percent of the names. Commencing with Luis, Diego, and Francisco (in third, fourth, and fifth places) we have the most important group—that of major saints. Next in importance in this group are Antonio, Juan, Pedro, Ramón, Leopoldo, Isidro, Carlos, Felipe, Santiago, Gregorio, Vicente, Nicolás, Andrés, Lorenzo, Agustín, Leonardo, Florentino, Felix, Fidel, Ignacio, Tomás, Basilio, Marcelino, Marcial, Marcos, and Primo. This group comprises about 50 percent of the total. It is noteworthy that Franciscan saints dominate; e. g., San Luis de Tolosa, San Francisco de Asís, San Antonio de Padua, San Juan Capistrano, San Pedro de Alcántara, and San Diego de Alcalá—the patron saint of Quiroga. Also, Spanish or pseudo-Spanish saints are important, such as (in addition to several of the above) Santiago (St. James the Greater), the patron Saint of Spain, San Isidro the Laborer (patron saint of Madrid), and several by the name of Ramón and Vicente. The Apostles, Evangelists, and the doctors of the church are not well represented other than Santiago mentioned above, Gregorio, Andrés, Agustín, and some of the Juans, Pedros, Felipes, and Tomases. Closely related to this group are two others, the first of which comprises personages from the Old Testament who are nominal saints; e. g., Ismael, Daniel, David, Samuel, Eliseo, Rubén, Abel, and others in descending order. This group comprises about 5 percent of the male population. The other group is made up of names that are inherently Spanish-Germanic, although several of the names were possessed by recognized saints. The leaders in this group, which covers about 8 percent of the males, are Alfonso, Enrique, Arturo (possibly Celtic in origin), Ricardo, Alfredo, Rodolfo, Adolfo, Alberto, Eduardo, Arnulfo, and Roberto. There remain two major distinct groups. One, which comprises about 5 percent of the males, contains the angels and archangels—Rafael, Miguel, Ángel, Gabriel, and Serafín, etc. The other, which covers about 5 percent of the males, embraces names connected with the Virgin Mary, e. g., Guadalupe, María, Refugio, Carmen, Encarnación, Socorro, Dolores, Natividad, Salud, and Joaquín (the father of Mary).

To stress the importance of the local Franciscan influence we should mention that the best *santos* preserved in the churches and chapels of Quiroga are those of San Diego de Alcalá, San José, San Francisco de Asís, San Antonio de Padua, and N. S. de la Purísima Concepción. Also there are, or have existed, chapels dedicated to San Antonio, San Vicente, San Miguel, et al.

COMBINATIONS

It has been mentioned already that José and María are used widely in combinations. Some of these combinations are mandatory; that is, Jesús should never appear without José or María, and the same is nominally true for many other names, such as Guadalupe, and Carmen. Other combinations are favorites, although not required, as in Ana María, Rosa María, María Isabel, María Luisa, María Teresa, María Elena, María Eugenia, María Cristina, and María Ester for girls; and José Luis, José Antonio, José Francisco, and rarely such as Juan Manuel, Victor Manuel, and Pedro Antonio for boys. Occasionally a tripart combination such as José María Concepción will be used. There is a general feeling in the Roman Catholic church that the names of non-saints (such as Abigail, Celia, Delia, Elvira, Eloisa, Ester, Ofelia, Raquel, Alfredo, Baltazar, Gaspar, and Gustavo.) should be given only in connection with the name of some saint. This attitude was not noted in Quiroga.

NAMES LACKING

In view of occurrences in some other parts of Mexico there are some interesting lacks and representations. Among male names lacking or represented by only one individual are Aaron, Abelardo, Anselmo, Baltazar, Benjamín, Blas, Clemente, Conrado, Edmundo, Ernesto, Gil, Gonzalo, Horacio, Jacobo, Lucas, Mateo, Othón, Raimundo, Ramiro, Rodrigo, Ruperto, Sebastián, Simón, Valentín, and Victor. Relatively poor representation was found for names such as Ignacio (8), Tomás (8), Marcos (7), Fernando (6), Lázaro (6), Gabriel (5), Jorge (5), Julio (5), Melchor (5), Pablo (5), Roberto (5), Domingo (4), Esteban (4), Pascual (4), Patricio (4), Rubén (4), Bernardo (3), Cruz (3), Hilario (3), Martín (3), Matías (3), Timoteo (3), Alejandro (2), Ambrosio (2), Cipriano (2), Cosme (2), Gaspar (2), Hipólito (2), and Julián (2). Among female names lacking or represented only by one person are Ágata, Alejandra, Bárbara, Benita, Berta, Carolina, Clara, Constancia, Cristina, Enriqueta, Eva, Inocencia, Leticia, Lucrecia, Mariana, Prudencia, and Ursula. Relatively poorly represented are Ramona (8), Susana (7), Victoria (7), Tomasa (6), Adelaida (5), Gregoria (5), Matilde (5), Micaela (5), Natalia (5), Paz (5), Felipa (4), Inés (4), Rebeca (4), Sofía (4), Dominga (3), Eugenia (3), Manuela (3), Marta (3), Camila (2), Cecilia (2), Eloisa (2), Evangelina (2), Florencia (2), Gertrudis (2), Gloria (2), Laura (2), Monica (2), and Teodora.

EQUIVALENTS

In Quiroga usage most of the names have both masculine and feminine forms, to an extent much greater than obtains in the United States. Examples from the more common names include:

Masculine:	Feminine:
José.	Josefa, Josefina.
Mario, José María.	María.
José Jesús.	María Jesus.
José Guadalupe.	María Guadalupe.
Luis.	Luisa.
José del Carmen.	María del Carmen.
Diego	Diega.
Francisco	Francisca.
Juan.	Juana.
Rafael.	Rafaela.
José Salud.	María Salud.
Salvador.	Salvadora.
Antonio.	Antonia.
Pedro.	Petra.
Manuel.	Manuela.
Ramón.	Ramona.

One can generalize that nearly all masculine names have feminine forms, but the reverse is not so true. There are no masculine forms of Teresa, Ester, Sara, Isabel, and Elena, for example. Furthermore, of the various manifestations and associations connected with María, we found no instances in Quiroga of the masculine use of Ángeles, Esperanza, Estela, Gracia, Luz, Mercedes, Paz, Pilar, and Rosario. Nevertheless, it is confusing to encounter men called María, Carmen, Consuelo, Dolores, Inés and the like, and women with such names as Encarnación, Jesús, Sacramento, and Reyes.

NICKNAMES

The most common nicknames are the abbreviated or altered forms of the regular Christian names. Among those commonly heard were Pepe and Chepe for José, Chucho and Chucha for Jesús, Maruca and Maruja for María, Chon for Encarnación, Concha for Concepción, Lupe for Guadalupe, Pancho and Paco for Francisco, Lola for Dolores and Carlota, Nacho for Ignacio, Catuja for Catalina, and Belica for Isabel. A variant, and very common, are the diminutives, such as Antonito for Antonio, Dieguito for Diego, Anita for Ana, Frasquito and Currito for Francisco, Pepita and Chepita for Josefa (and equivalents for José), Mariquita for María, Lolita for Dolores, and Conchita for Concepción.

Descriptive nicknames, commonly used in the third person preceded by the article "el" or "la," are such as El Chino (The curly-haired one; not the Chinaman), El Gordo (The fat one), La Rubia or La Guera (The blonde or fair one), El Mocho (The one-armed one), El Cojo (The crippled one), La Loca (The crazy one), El Tuerto (The one-eyed one), El Flaco (The lazy or thin one), and El Tlacuache (The opossum). Also there are used such descriptive, and usually depreciative, substantives and adjectives as Chango (monkey), Chato (flat-nosed or flat-faced), Chapo and Chaparrito (shorty), Charro (dandy), Chamaco (kid, small boy), Chayote (tomboy), Gata (a female servant or working girl), Cabezón (dunce), Coyote (a sly or dishonest person), Cuatrojos (one who wears spectacles), Jamona (a big woman), Vieja (old woman), Tía (old woman; witch). Often two important individuals with the same names will have distinctive agnomens.

For example, two of the leading citizens of the area are Don Diego Fuentes Ayala and Don Diego Fuentes Aguilar. Although the compound names would differentiate them, the first is known as Don Diego (Fuentes) Palos (because he is tall) and the second is termed Don Diego (Fuentes) Tirímicua (because he owns much of the Tirímicua area). In addition there are three other Diego Fuentes in Quiroga, one in Caríngaro, and one in Sanambo, a total of seven in the area.

During the last 30-odd years forms of address have been democratized greatly. Where formerly only people of considerable wealth or position (as well as priests, doctors, and lawyers) were referred to or addressed as *señor* (mister) or *señora* (mistress) with the surname, or as *don* or *doña* with the Christian name, these terms are now used very widely. A number of terms are used to designate both real relationships and also close friendship, such as *cuate* (twin, chum), *cuñado* (brother-in-law, close friend), *compadre* and *compa* (gossip, very close friend), *hermano, mano, manito,* (brother, close friend). One's own teachers, any highly respected teacher, and master artisans or craftsmen are termed *maestro* or *maistro* (master). Most school teachers are called *profesor,* which was the most common term used in referring to the senior author's two assistants in Quiroga. The senior author was addressed by his students as *doctor,* and this term was widely adopted in Quiroga by our acquaintances, but it led to misapprehensions since commonly *doctor* in Mexico is applied only to physicians. The parish priest usually was addressed as *padre* or *mi padre* (father, my father). The few resident professional men, and those visiting Quiroga, commonly were addressed or referred to by their professional title; e. g., *Señor licenciado* or *Licenciado* (Mr. Lawyer, or Lawyer).

EDUCATION

HISTORY

Concerning formal education in Cocupao-Quiroga during the colonial period we know practically nothing. However, from what is known for the Michoacán area during that period we may assume that in this small Indian community all of the education was controlled by the Franciscan friars and consisted of the bases of the Christian religion as taught in catechism classes and rudiments of vocational training taught in the hospital by Indian and mestizo members of the community. In addition there was the apprentice system in those *gremios* established in Cocupao and open by law to Indians and mestizos. In the colonial period Michoacán was noted for the excellence of its artisans, linguists, and theologians trained in the schools and seminaries of the Franciscans, Augustinians, and Jesuits. Cocupao had no notable educational establishments, but in nearby Tiripitio, Tzintzuntzan, Pátzcuaro, and Valladolid were a number of the outstanding and earliest educational establishments in Mexico.

This early tradition of education (fomented by such men as Bishop Quiroga, Fray Juan de San Miguel, and Fray Alonso de la Vera Cruz) may help to explain why a majority of the early intellectual and military leaders of the revolt against Spain were natives of the Province of Michoacán, and why in later years Michoacán has continued to supply more than her quota of leaders of thought and action. Also, it is noteworthy that Michoacán had a considerable number of schools during the so-called "dark ages of education" in independent Mexico from the time of Independence until the Madero Revolution. Possibly the status of education in Mexico during the nineteenth century has been depreciated by modern protagonists of the Revolutionary Socialist School who like to believe that there was little or nothing of cultural value for the proletariat. More likely there exists a real ignorance among contemporary historians and educators as to the status of education in Mexico outside of the largest urban centers during the nineteenth century. It is true that the majority of the people were illiterate, and that the Indians and the inhabitants of rural areas in general had little opportunity for schooling, but there was not an absolute lack of schools in rural and semirural areas. A case in point is Cocupao-Quiroga.

By about 1831 a school for boys, apparently supported by the municipality, was established in Cocupao. Our first definite statistics date from 1845 at which time the Escuela Pública de Niños de Primera Letras (Boys' Public Primary School) had one teacher (José María Castro), 45 pupils, and a curriculum consisting of orthoëpy (*ortología*), writing, spelling, arithmetic, history, and etiquette (*urbanidad*). By 1847–48 there were 90 pupils, and in 1848–49 the system of education followed was said to be a modification of the sys-

tems of Bell and Lancaster (British exponents of systems of monitorial mass education). This school continued until the period of French intervention, and was reopened in 1868 in an old chapel building with one teacher (José María Cázares). Apparently in the same year the first girls' public school was opened in Quiroga, with one teacher (Juana Prado). During the academic year 1868 the attendance in the boys' school ranged from 90 to 143, and in the girls' school from 115 to 171. At that time the annual salary of the teacher and director of the boys' school was $400 and of the girls' school was $300. During all of this period the schools in Quiroga essentially were municipal schools, since it is recorded in 1871 that the *ayuntamiento* could hire and fire the teachers, and had to provide the school buildings, equipment, and the salaries of the teachers. By State law of May 15, 1871, the *ayuntamientos* were empowered to use (for educational purposes) the funds derived from the *Derecho de Patente* (on livestock), the impost on liquor and tobacco shops, one-half *real* tax on every *fanega* of maize brought into town (a part of the *alcabala* system of taxation), and the 5 percent impost on all bets on cock fights. By 1881 there existed in the municipality the following primary schools: Quiroga—one public boys', one public girls', two private boys', three private girls'; Santa Fe de la Laguna—one public and one private boys'; San Jerónimo—one public boys'; San Andrés—one public boys'; Tzintzuntzan—one public and one private boys', one private girls'; and Atzimbo—one private boys' school. From 1881 to 1885 the total average attendance in public primary schools in Quiroga town was 178, and in the private schools the average was 143. If these official statistics are correct, an average of 321 children were obtaining primary education each year in Quiroga in the 1880's. A check of the 1940 census showed that 46 percent of the inhabitants of the town of Quiroga who were 50 or more years old had been to school and were literate, and 40 percent of the individuals 60 or more years of age were literate and had been to school. If the death rates for the schooled and the unschooled have been the same, this would indicate that at least 40 percent of the population of school age in the 1880's and 1890's in Quiroga went to school. Since the group of oldsters who had gone to school included nearly all of the occupations present in Quiroga, from *arriero* and *cohetero* to *agricultor* and *comerciante*, it would seem that the educational facilities in Quiroga were open to everyone.

The public schools have had an uninterrupted history from 1868 to date excepting for the years 1870 and 1918 when apparently no schools were open in Quiroga. At some uncertain date in the 1930's the local municipal and State-supported schools were taken over by the Federal Government. Theoretically the period 1821–57 was dominated by municipal schools; from 1857 to 1935 all local public schools were State-controlled; and since 1934 the Federal Government has taken over most of the primary schools. In 1935 the boys' and girls' schools were combined for coeducational purposes under the name Escuela Oficial Mixta. At present this school, known as the Escuela Primaria Federal "Miguel Hidalgo," is housed in a rented building facing onto the Calzada Ramón Corona just above the Plaza Principal. At a date we were not able to ascertain a State-supported school was established in the upper end of town, in the former chapel of San Miguel, for the benefit of the children of the agrarian *ejidatarios* of the Calvario district. This school has come under Federal control and is now known as the Escuela Rural Federalizada "Redención." This latter school offers the first four grades of primary work, and commonly has one or two teachers. The semiurban school near the center of town always offers the first cycle of 4 years of primary work, and when there are students the second cycle of the fifth and sixth years of primary work is given. In Mexico, primary work consists of 6 years or grades, and secondary work covers 3 years. However, only primary schooling is given in Quiroga, and students who wish further training go to various State and Federal secondary, agricultural, and normal schools in Morelia, La Huerta (an *escuela central agrícola* near Morelia), and Pátzcuaro. The nearest normal schools are in Morelia and Zamora, and the State university (the oldest in Mexico) is in Morelia.

TEACHERS

The number of teachers has increased from the one director-teacher of the nineteenth century to a number which varies between six and eight at the present time (1945) in the Federal semiurban school. Since 1939 the group of teachers has included such specialists as musicians, dressmakers,

and carpenters. Because some of the teachers have ranked in influence only after the priests, we have compiled the list which follows:

Teacher-principals of the official boys' school

1877–92____ Cornelio Medina.
1893–1900__ Felipe N. Chávez.
1901_____ Pascual Carranza.
1902–3_____ Norberto S. Rocha.
1904–6_____ Vicente León de la Vega.
1907–9_____ Manuel E. Guerrero.
1910–11____ Victoriano Ruiz H.
1912–13____ G. Suárez.
1914_____ Antonio Pizarro.
1915_____ Ignacio de L. Pureco.
1916–17____ José Tránsito Acuña.
1918_____ No school.
1919–21____ Salvador Carrasco.

Principals of the boys' school

1922–26____ Efrén Gontis.
1927–28____ Eliseo Pérez.
1929–32____ Miguel Silva Díaz.
1933–34____ Antero M. Díaz.

Principals of the coeducational school

1935_____ Carmen López Barrera; Martín Alejandre.
1936_____ J. Jesús García Tapia.
1937_____ Andrés Barrera López.
1938–45____ Andrés Natividad Ríos.

Although religious schools (that is, schools taught by members of religious organizations) have been outlawed in Mexico for many years, the private schools that exist now in Quiroga are direct descendants of the earlier frankly Catholic private schools. The principal private school (Escuela Particular "Vasco de Quiroga") occupies part of an edifice in the Portal Allende, and is operated by six ladies who seem to be nuns in every respect excepting public garb. However, the Federal and State constitutions are not flaunted nearly so openly here as in some of the Indian communities of the Sierra Tarasca, where parochial schools have more pupils than the public schools.

LITERACY

The effectiveness of the schools in Quiroga is difficult to assess. One of the obvious criteria is percentage of literacy. Statements of literacy and illiteracy, when expressed in percentages, are not altogether reliable since the standards and ages involved vary from census to census. Commonly in the United States the percentage of literacy means the percentage of the population 10 years of age and older who can both read and write. Often in Mexico it is assumed that any person who has completed the first grade of primary school is literate, and also frequently persons who can read but who cannot write are included among the literates. Furthermore, the lower age limit involved is not always the same in the various census returns. This is partly because of uncertainty concerning the exact age of various individuals, and partly because of the laxness of the census taker who is often a local person with inadequate instruction concerning the techniques and purposes of the census. In the population censuses of 1900 and 1910 illiteracy was computed for the population 12 years of age and older; beginning with the census of 1921 the internationally accepted limit of 10 years has been used. However, in connection with the campaign against illiteracy (Campaña contra el Analfabetismo) which was initiated by law in August of 1944 and placed in execution in March of 1945, an attempt was made to reach all illiterate persons between the ages of 6 and 40. Apparently the census of illiterates made in the Quiroga area by the teachers and municipal authorities in 1945 was not consistent in its limits: in some sectors all illiterates above the age of 6 were listed, in others the lower limit was taken as the age of 10, and in some sectors only illiterates up to 40 were included. In our own census of 1945 we relied entirely upon our informants for the number of individuals in each family who could not read and write but whose age would imply the theoretical possibility. Presumably the illiterates in our census represent persons above the age of 9, but undoubtedly errors have entered into our returns. In table 31 statistics of various types give some indication of the schooling and literacy in the Quiroga area. It is apparent that numerous errors are present in the two above-mentioned censuses and in the distribution of population by ages. In the Villa de Quiroga we asked only for illiterates, so we have no figure on the literates. Theoretically the sum of the literates and the illiterates (2,107) should exceed the number of people 10 years of age and older in 1945 (2,902), but it does not even approach the figure for 1940 (2,720). Since the number of illiterates in the official census for 1945 is approximately the same as in our census (aided by one interpolation), although there is considerable difference

in details, and since the literates in the ranchos are identical (with the exception of Atzimbo), probably the error consists of not listing all of the literates in the town of Quiroga. This assumption is backed by an examination of table 32, which shows ths literate persons as of the 1940 general census.

TABLE 31.—*Schooling and literacy in the Quiroga area*

Division	Population [1]					
	1940			1945		
	Above age 5	Above age 9	Total	Above age 5	Above age 9	Total
Villa Quiroga	2,364	2,135	3,009	2,618	2,278	3,161
Ranchos de Quiroga	700	585	890	773	624	998
Total	3,064	2,720	3,899	3,391	2,902	4,159

Division	Official 1945 illiteracy census		1945 census (author's)	
	Literate	Illiterate	Literate	Illiterate
Villa Quiroga	729	776	----------	688
Cuartel I	190	147	----------	115
Cuartel II	203	206	----------	206
Cuartel III	146	276	----------	234
Cuartel IV	190	146	----------	133
Ranchos	80	522	35	607
Atzimbo	70	68	25	113
Caríngaro	1	36	1	37
Icuácato	2	[2] (154)	2	154
Sanambo	6	196	6	237
La Tirímicua	1	33	1	42
Zirandangacho	0	35	0	24
Total	809	1,298	----------	1,295

[1] "Above 9" means age 10 and upward, and "above 5" means age 6 and upward. The distribution by ages is exact for 1940, but is based on 1940 proportions for 1945.
[2] This figure was supplied from the author's 1945 census.

TABLE 32.—*1940 census data on literacy*

Division	Individuals who can—		Illiterate (age 6 and older)	Illiterate (age 10 and older)
	Read and write	Read only [1]		
Villa Quiroga:				
Cuartel I	283	22	279	213
Cuartel II	288	21	403	326
Cuartel III	302	14	245	187
Cuartel IV	258	21	289	238
Total	1,131	78	1,216	964
Ranchos:				
Atzimbo	55	0	86	73
Caríngaro	0	0	49	40
Icuácato	7	0	197	166
Sanambo	15	0	212	170
La Tirímicua	4	0	60	46
Zirandangacho	0	0	16	11
Total	81	0	620	506
Villa Quiroga and ranchos	1,212	78	1,836	1,470

[1] Those who can only read are grouped with the illiterates.

It will be noted that the figures in table 32 also are not fully reliable, since the sum of the illiterates age 10 and older and the literates (which include some children under 10) should exceed the total population age 10 and older, but fails to do so (2,682 compared with 2,720). Nevertheless, the figures probably are accurate enough to give a percentage of about 54 for illiteracy in the Quiroga area in 1940. If we accept a round number of 1,300 illiterates for 1945, and a total of 2,902 in the age group 10 and older, the percentage of illiteracy in 1945 was about 44.8 percent. This figure can be compared with the national average of 48 percent as stated by Secretary of Public Education, Don Jaime Torres Bodet, in his speech of August 27, 1944. According to recent censuses the percentage of illiteracy in Michoacán has been: 55.14 in 1940, and 66.86 in 1930. The entire municipality of Quiroga has had illiteracy percentages as follows: almost 60 in 1940, and a trifle less than 69 in 1930.

The 1940 census data on schooling are shown in table 33.

Unfortunately we did not obtain the school enrollment for recent years in Quiroga. Probably it is considerably higher now than was indicated by the census data for 1940. In 1940 there were 556 children of ages 6 to 12, inclusive, who had never been to school, and there were 118 other children of that age group who had dropped out of school after some schooling (41 had taken the first grade, 42 had taken second-grade work, 21 had progressed through the third grade, 13 had finished the fourth grade, 1 had taken the fifth grade, and none had gone as far as the sixth grade). This situation, despite the fact that primary schooling is theoretically free and compulsory (for ages 6 through 14), is due chiefly to economic factors. The children cannot be spared from helping earn the family living, or at best usually the children go to school only the first 3 or 4 years while they are at ages too young to be of much economic importance. Although some of the school children, in 1940, were as young as 5 and others were as old as 15, most of them were 7 to 12 years of age.

The 31 individuals with more than an elementary education comprised 2 with 12 years past primary schooling (the physician, and the priest), 1 with 10 years of intermediate and higher education,

TABLE 33.—*1940 census data on schooling in Quiroga and ranchos*

Grade	Number of individuals completing indicated grade	Number of children in school
First	213	27
Second	306	42
Third	241	27
Fourth	265	6
Fifth	133	5
Sixth	101	1
Beyond primary grades	31	
Total	1,290	108

4 with 6 years, 2 with 5 years, 3 with 4 years, 3 with 3 years, 11 with 2 years, and 5 with but 1 year. Many of these individuals (physician, priest, teachers, et al.) were not natives of Quiroga.

An inspection of the data given above shows that schooling and literacy are virtually nil in the ranchos (excepting Atzimbo which once had a private school), and that *cuarteles* II and III (which contain the Calvario district) have the greatest concentration of illiteracy. The ranchos with no school facilities are truly neglected, but the large number of illiterate children in Quiroga town (which has two public schools) shows that economic conditions must be improved and that a real desire for education must be inculcated before illiteracy will be drastically reduced. At present there are many families in which the parents or even the grandparents are literate while none of the children have been to school.

Quiroga has no public library, bookstores, stationery shops, or periodical stands. The nearest location of such establishments is Pátzcuaro, and a few miles more distant is Morelia, the best-equipped cultural center in the State. There are two Quiroga men who act as distribution agents for newspapers and several other periodicals. The average circulation is as follows:

Daily Mexico City newspapers:
- Excelsior 17
- Novedades 10
- El Nacional 5
- Universal 2

Weekly newspapers:
- Restauración 52

Weekly magazines:
- Policía 30
- Jueves de Excelsior 25
- Sucesos para Todos 15

Biweekly magazines:
- La Familia 15

Monthly magazines:
- Selecciones 17
- Mignón 2

Also, the journal of the Sinarquistas had a large "give away" circulation.

For a time in the latter part of the nineteenth century the Elizarrarás brothers ran a printing establishment in Quiroga, and novels of crime and adventure were among the items printed. For several years, about 1898–1900, the local tax collector (Aureliano Macías) published a newspaper, El Paladín.

LANGUAGE

At present Spanish (more precisely, Castilian) is practically the only language spoken in Quiroga and its ranchos. As has been indicated elsewhere, probably the inhabitants of the ranchos (with the exception of La Tirímicua) never had a language other than Spanish. However, Cocupao started as an Indian community in which only the Tarascan (Purépecha) was spoken, and throughout the colonial period there are references to the use of interpreters by administrators in their dealings with the natives of Cocupao. As has been shown, Cocupao gradually became a mestizo community, and concomitantly Spanish replaced the Tarascan language. Some time during the nineteenth century the bulk of the Tarascan-speaking population became concentrated in the San Miguel or Calvario district, and by the end of the century the last of the native speakers of Tarascan died. The State census of 1889 gave the population of the town of Quiroga as 3,407 "Hispano-Americanos" and 625 "Indígenas" (Indians). However, no information was given as to how many of these "Indians" could speak Tarascan. A number of the older men in Quiroga in 1945 stated that their fathers spoke both Tarascan and Spanish. Writing as of 1884, León states that the Indians of Quiroga spoke Spanish and poor Tarascan. According to our census of 1945 there were 6 individuals who spoke Tarascan as their mother tongue (these were bilingual Indians from the Tarascan pueblos of the municipality, and two of their children born in Quiroga), and one mestizo who had learned Tarascan while living as a child in Santa Fe. The census of 1940 showed two Spanish-speaking persons who also spoke Tarascan.

The foreign language understood by the greatest number of people is English. There were 45 individuals who admitted having some knowledge of English from having lived in the United States, and three others had studied English in school. However, only two individuals ever tried to converse with us in English, and it is doubtful if many

of the 48 people listed as having a knowledge of English actually have a working command of this language. The 1940 census showed but six individuals who could speak English. Also, in 1945, there were three individuals who could speak French, and two with a knowledge of Latin.

The Spanish or Castilian spoken in Quiroga is the type, often incorrectly referred to as the Andalusian dialect, which dominates most of Spanish America. More specifically, it belongs to the dialect which obtains over most of Mexico and Central America, and which is characterized by a large number of words of Mexicano (Nahuatl) origin, together with some words of Taino (Arawak) derivation. In Quiroga and the old Tarascan region in general there is a sub-dialect of Mexican Spanish which is differentiated by the comparatively large number of Tarascan words employed and by certain peculiar usages of Spanish words. So far as we know, no philologist has studied this Michoacán dialect which extends southward into parts of Guerrero and northward into Guanajuato. In this monograph there is space for only a few comments on the Michoacán dialect.

Spanish was introduced by conquerors, colonists, administrators, and religious, many of whom had acquired a number of Taino substantives in the West Indies, and a yet larger number of Mexicano nouns by reason of using Mexicano-speaking Indians as allies, servants, and interpreters. Consequent to the establishment of political, religious, and educational headquarters in the Mexicano-speaking area of the Valley of Mexico, the Europeans who settled in the province of Michoacán had only the Mexicano if they had any Indian language. As the Tarascans learned Spanish they incorporated as presumptive Spanish words many words of Mexicano and Taino origin which the Spaniards had adopted for material items which were lacking in the Old World. In this fashion such non-Tarascan and non-Spanish words as *guajolote* (turkey), *maíz* (maize), *chile* and *ají* (*Capsicum* pepper), *tabaco* (tobacco), *metate* (nether mealing stone), and *cacique* (chieftain) were adopted by the acculturated Tarascans and the mestizos. In relatively few instances Tarascan words for items of general Mexican distribution were retained; e. g., *huarache* (sandal), *cirián* (*Crescentia cujete*), *yácata* (temple mound or ruin), *até* (sweet or sirup), *charanda* (red, as in red earth), *tarecua* (a type of hoe or digging stick), *tacari* (Spanish moss), *chinapu* (obsidian), *xanamu* (a rock used in construction), *tiripu* (dodder), etc. In some cases a Spanish name was retained for a New World item (as *tortilla*, for the pancake of ground *nixtamal*, and *mano* for the handstone or muller); and in other cases a Mexicano name became current for an item with a perfectly good Spanish name available (e. g., *petate* for mat, *mecate* for rope, and *malacate* for spindle whorl and windlass). The reasons for such selection among the Spanish, Mexicano, Taino, Tarascan, and other languages have never been properly investigated. In summary, the various parts of speech are almost entirely Spanish, excepting the nouns and a few verbs. It would be difficult to decide whether more Spanish or Indian substantives are used in everyday speech. Certainly a majority of the plants, animals, and items encountered in a kitchen have Indian names. For example, *maíz* or *nixtamal* ground on a *metate* may be flavored with *chile* and made into a *tamal*, or cooked on a *comal* to make *tortillas* (Sp.), or else converted into *atoles*, *pozoles*, etc. Also, the farmer may set out for his *milpa*, carrying a *huaje* full of water, and with an *ayate* of *nequén* or *ixtle* in which he will bring back *ejotes*, *elotes*, or possibly *zacate*. There are only a few Indian verbs, such as *piscar* (to harvest) and the bastard verb *enchilar* (to make piquant with chile). There are corruptions of Spanish, most of them common to much of Mexico, but a few are more common here than over most of Mexico, e. g., *suidad* for *ciudad*. Also there are provincialisms such as the use of *harto* to mean "very" or "exceedingly," as in *harto hondo* (very deep).

One of the most interesting linguistic phenomena in the area is the definite line which can be drawn between the Spanish-speaking town of Quiroga and Tarascan-speaking Santa Fe de la Laguna within view to the west. This demarcation is all the more interesting because Santa Fe, San Jerónimo, and San Andrés are in the municipality of Quiroga, and their inhabitants must go to Quiroga to market, to pay taxes, to be inscribed in the civil register, etc. Furthermore, farmers of Santa Fe cultivate lands right to the "walls" of Quiroga town. However, it remains to be seen how long the retention of Tarascan can withstand the presence of a paved through highway,

bus lines, and a modern primary school. Most of the people of Santa Fe are bilingual, and it is merely a matter of how strong the local forces are which perpetuate the Tarascan along with the Spanish.

RECREATION

Probably the outstanding "recreations" are the religious-social festivals which have been mentioned previously. Also, the weekly markets, the fetching of water, and the washing of clothes at some spring or water hole afford the women and girls combinations of work and pleasure in which the pleasure is provided by the opportunity to visit and to gossip. The *campesinos* obtain the equivalent social pleasures going to and from work in the fields and woods. Furthermore, a great many of the men congregate in off-hours in the two pool halls and the four *cantinas*, and to a lesser extent in the barbershops. However, during our entire stay in Quiroga we saw relatively few drunks and very few loafers.

For no good reason Quiroga has neither a band nor an orchestra, and whenever such are needed the musicians must be brought in from Pátzcuaro or such communities as Teremendo, Ihuatzio, San Jerónimo, and San Andrés. Consequently, although Quiroga has a pleasant plaza with a kiosk, there is no formal *serenata* (evening promenade and opportunity for courting to the strains of occasional music). However, on many evenings and especially on Sundays there is some promenading in the Plaza Principal, punctuated by purchases at nearby stands and booths of foods, soft drinks, and ices. Most of the music heard in Quiroga is provided by the 6 *sinfonolas* (juke boxes), 62 radios, and 9 phonographs. The rate of increase of the radio is indicated by the fact that in 1939 there were only 28 radios in the entire municipality. There are four pianos in Quiroga, but as we made no attempt to census other musical instruments we can only surmise from observation that portable stringed instruments (violins and guitars) are the most numerous. Also, there are a few drums and flutes used in connection with religious ceremonies, although we were given to understand that flutists and drummers were brought in on occasion. These latter instruments can be considered as derived from Tarascan prototypes since wooden and skin drums, flutes, ocarinas, trumpets, and rattles were important in pre-Conquest Michoacán, and the Relación de Michoacán mentions the existence of a chief of musicians. In addition to the ceremonial dances (Moros y Cristianos, Santiago, Toritos, etc.) there are a few public dances each year. However, most of the dances are comparatively small private affairs. The music played is a combination of native Mexican, European, and North American pieces. The younger people seem to like American dance music, although we feel that their own dance music is superior. It was interesting to note in 1945 that the "Raspa," which was currently popular, was considered to be of North American origin although we had encountered it years earlier in the American border states where it was considered a Mexican importation.

Competitive group sports are quite popular at present in Quiroga. Apparently this is a development since 1935. The town and schools of Quiroga boast of five soccer teams, four baseball teams, one basketball team, and one volleyball team. The leading football (soccer) team is the Vasco de Quiroga which more than holds its own in competition with teams from larger centers such as Pátzcuaro and Morelia. A football field has been cleared west of town, and matches open and free to the public are played here. Ball games, of course, are no novelty to the peoples of Michoacán, since the ancient Tarascans played a form of the *juego de pelota* which was so important prehistorically over central and southern Mexico. We were unable to locate a prehistoric ball court (*querehta* or *queretaro*) in the area, although one presumably was located near Ihuatzio, and in 1941 we saw one in the northwestern part of the State near Jiquilpan. The *juego de pelota* was outlawed in the early colonial period.

Traditional Spanish sports include bull fights, cock fights, and horse races. These were avidly followed in Quiroga during the nineteenth century and until the Madero Revolution. At present horse races are rare (the number and quality of the horses in the area have declined since the revolution), and the dirt track formerly used is now the paved street known as Las Carreras. Although real *corridas de toros* were held occasionally in the latter part of the nineteenth century, and a formal Plaza de Toros was erected on the Calle de la Reforma in 1900, at present there is only the rustic form of bull baiting which forms a

part of the *jaripeos* (something like a rodeo of the Southwestern United States) held in a plaza between Ramón Corona and La Llave. Formerly Quiroga had an elaborate arena or pit for cock fighting, but now the sport is in a decline and only occasional matches are held between local birds and with foreign birds in connection with the more important festivals and fairs of the region. There are several owners of fighting cocks in Quiroga.

Sporadic entertainment is provided by traveling theaters, carnivals, circuses, and other shows, although most of the traveling shows stop in Morelia, Pátzcuaro, and Zacapu, and consider Quiroga too small to justify even a one day or night stand. The schools, religious groups, and other local organizations put on a number of pageants and plays each year—mainly in connection with the leading religious and patriotic festivals. There is one cinema which was opened about 1941. It had ceased to function by 1944, but was reopened under new management in June of 1945.

Among the rustic pleasures are picnics, bathing parties, and boat rides. These were more indulged in prior to the revolution than at present. Since Quiroga lacks a pier and a bathing beach, the inhabitants must go to Pátzcuaro for boat rides, and to the lake beach at Chupícuaro near Santa Fe and to such thermal springs as Cointzio and Zinapécuaro for bathing. Occasionally groups go on picnic excursions to the fir-clad heights of Tzirate, to the extinct volcano of the Cerro Hueco (whose conduit and lateral tunnels are local curiosities), and to other nearby localities of scenic and other attractions. The leading sedentary games are dominoes, chess, checkers, and various card games. In a number of the stores are chess boards and sets, and it is not uncommon to see the proprietor and a friend, or a couple of erstwhile customers, engaged in a carefully played game. Both the frequency and the caliber of chess play seemed to be above what obtains in communities of comparable size in the United States.

HEALTH AND SANITATION

As mentioned previously, the annual mortality rate in Quiroga was 22.5 per thousand inhabitants on the average during the period 1937–45; and the chief immediate causes of death have been diseases of the gastrointestinal tract, respiratory diseases, and the "debility-anemia" group. The evidence indicates that polluted water, insect-infested foods, improper housing and clothing, and nutritional lacks are the chief factors in propagating these diseases. The entire water-supply systems of the town and the ranchos require extensive expansion, repair, and improvement. Protection of foods from insects by screening of shops, markets, restaurants, and kitchens is practically lacking. Disposal of human wastes, garbage, and other refuse is quite primitive. The commonly dirt-floored and partially open kitchens are quite unhygienic. Most of the quarters in which people sleep either are closed too tightly at night for proper ventilation, or are entirely too exposed to drafts of cold night air. Most of the "beds" are comfortless and do not allow for real rest. There is a common tendency to bundle up too much about the head and chest (with serapes, rebozos, etc.), and to expose the lower portion of the body excessively. Malnutrition is evident, but only an extensive analysis of the local foods could determine the precise nutritional lacks.

Little by little practical education in the schools and the work of the private resident physician and of the Servicio Médico Social and the earlier Servicio Médico Ejidal and other governmental agencies are improving living conditions and the general health of the people of the Quiroga area. However, the physicians of the present as well as of the past have devoted most of their attention to curing the results rather than eliminating the causes of ill health. Since most of the causes are associated with deeply rooted customs and with the economic situation, it will take years of education and a marked rise in the standard of living before the general health of the population can be greatly improved. Figures are available on one factor involved, the sleeping accomodations of the Quiroga area. According to the 1940 census 2,916 people slept on some sort of bed (*cama*), 782 slept on a mat laid directly on the ground (listed in the census as *petate*, and *suelo*), 136 slept on a cot (*catre*, usually a folding framework of wood covered with canvas), and 65 persons slept on a *tapexco* (usually this term means a bed of canes or *otates* covered with a mat and often supported on two horses). Actually the bed or *cama* is frequently no more than some boards or canes supported by a couple of benches, stools, or horses. Also it is certain, from observation and from the general lack of water and of bathing facilities in

the homes, that personal cleanliness could be improved upon greatly. Although there is one public bathhouse at present (and one was recorded for Quiroga as early as 1878), its limited facilities are not taxed. In this connection it is interesting to surmise why the sweat bath (*temezcal* in Mexicano and *huringuequa* in Tarascan) has not survived in this portion of Mexico. It was known and used prehistorically by the Tarascans, and the sweat bath was a part of the various Indian hospitals in the colonial period.

Apparently the first resident physician was Dr. Octaviano Valdés (who had studied abroad), who took up practice in Quiroga as early as 1874, and by 1877 there was one resident pharmacist. Before the end of the century six other doctors had practiced in Quiroga, at least three of whom were natives of Quiroga who had obtained their education in Morelia (Dr. Francisco Calvillo, Dr. Victoriano León, and Dr. J. Jesús García Pita). Doctors León (ca. 1887–1910) and García (ca. 1890–1914) were the leading and often the only doctors in Quiroga for some 20 years prior to the revolution. From about 1914 or 1915 until 1936 there were no resident physicians excepting two about 1926–27. Beginning in 1936 there has been at least one physician in residence, and a total of six different doctors have lived in Quiroga between 1936 and 1945. The physician now in private practice is Dr. Arturo H. Rascón (degree from the Escuela Médico Militar), who first came to Quiroga with the Ejidal Medical Service 1939-41. In 1945 there was also Dr. Genaro Hernández Rodríguez serving a 5-month "internship" with the Social Medical Service.

FOOD, DRINK, AND DRUGS

Since we did not make a definite survey of food and drink habits in the Quiroga area, the following remarks (based on sporadic observations) are to be considered as approximations of the situation. Starch foods must comprise at least three-fifths by dry weight of all food consumed. The chief sources of starch are maize (more than half of all the food by weight), wheat, beans (kidney, horse, lima, etc.), bananas, rice, potatoes, and sweet-potatoes. Proteins are provided by meats (principally beef, followed distantly by pork, and then poultry), beans, fish, cheese, eggs, peanuts, pumpkin seeds, etc. Most of the calcium is derived from the *nixtamal*, and smaller quantities are obtained from dried fish (*charal*) and various greens. Chile peppers are important sources of carotene, thiamine, riboflavin, niacin and ascorbic acid. Lard is the most used cooking fat, in addition to which some fat is introduced into the diet from various meats, milk, peanuts, avocados, pumpkin seeds, etc., Brown cane sugar is the chief form in which sugar is consumed and some sugar is obtained from the most popular fruits—various citrus fruits and bananas. Tomatoes, cabbages, pumpkins, onions, peas, and carrots predominate among the cooked vegetables. Chile peppers, tomatoes, onion and garlic, marjorams, coriander, and cinnamon are the most common flavorings. Maize *atoles*, coffee, milk, and chocolate are the leading nonalcoholic beverages.

Among the everyday dishes there are no novelties not found elsewhere in Mexico. Since there are adequate descriptions of all of the common Mexican foods available in cookbooks and ethnographic monographs (see Beals, 1946, and Foster, 1948), there is no point in discussing recipes. Maize enters into a majority of the prepared foods, which run the gamut from breadstuffs (tortillas, etc.), through stews (hominy in *pozole*), to parched corn (*pinole*) and popcorn, and various gruels and drinks (*atoles*). For some reason the Mexican Government has concerned itself with the number of people who commonly eat wheat bread (*pan de trigo*) either in addition to or to the exclusion of tortillas. According to the 1940 census there were in Quiroga and its ranchos 541 people who commonly ate wheat bread and 3,358 who did not. The proportion of wheat eaters has increased somewhat since the 1940 census. The number of dishes or foods consumed in a Quiroga family increases with the wealth of the family. The very poorest live most of the time on tortillas with chile and *atoles*, supplemented by gathered greens and fruits. The poor add beans and a few other items to the basic diet. Those somewhat better off add meat, fish, and wheat bread and a number of vegetables, fruits, flavorings, etc., and so on up progressively. Contrary to popular opinion in the United States, tamales are not a common everyday food, and when tamales are eaten they usually do not contain a meat filler. Chile and other sauces, and bean paste are often used in tamales. The number of meals and the hours of eating vary greatly with wealth and occupation. The

number normally ranges from two to four, and the hours commonly are: a very light meal (often only *atole* and tortillas, or coffee and sweet rolls), known as *desayuno* (breakfast), eaten between 5 and 8 in the morning; a more substantial meal (commonly including tortillas, beans, and perhaps meat or eggs), generally designated as *almuerzo*, at about 10 in the morning; what is often the main meal of the day (*comida*) in the early or mid-afternoon between 1 and 4; and an evening meal (also known as *comida*, and as *cena*) sometime between 6 and 9. Most foods are prepared by boiling or frying. Since the variety of dishes is restricted for most families, there are comparatively few foods that are consumed only at some particular meal, e. g., steak may show up at breakfast rather than at dinner, and breakfast cereals are commonly lacking (other than the thin gruels or *atoles*). Where a number of dishes constitute the meal (true for only a minority of the families), these are brought to the table in separate courses—from soup to dessert. A sweet dessert usually is lacking. There is a wry saying that beans are "el plato de los pobres y el postre de los ricos" (the main dish of the poor and the dessert of the rich), and stewed beans are the most common dessert.

As mentioned, the leading nonintoxicating drinks are *atoles*, coffee, milk, and chocolate. The maize *atoles* (ground *nixtamal* mixed with hot water or boiled, and strained to various consistencies) are very numerous since dozens of items may be added for sweetening, flavoring, and color. Among the favored flavorings are cinnamon, chocolate, native plums and cherries, ground cacao husks and mamey seeds, and seed of the Peruvian pepper tree. The *atoles* undoubtedly constitute the national drink of Mexico, if quantity consumed and number of consumers are the criteria. Coffee drinking (most commonly black, often with the cold coffee extract added to boiling hot milk) has had a remarkable development in Mexico during the past one hundred years. In 1800 no coffee was raised commercially in Mexico and only a little was consumed in some of the larger cities; in 1823 the upper classes were drinking perhaps half as much coffee as chocolate, and coffee shops were to be found in the larger towns along stage routes; by the 1840's Mexico (including Michoacán) was producing enough coffee for local consumption, but the common people were as yet not drinking coffee; after the 1860's coffee planting increased greatly (Mexico is now one of the top six or seven producers in the world) and coffee entered rapidly into the life of the common people with the exception of the very poorest. Now it is difficult to find a community in which coffee is not consumed. In Quiroga and its ranchos coffee ranks only after *atoles*. Drinking of milk (other than human) was introduced by the Spaniards. At present milk is fairly common, although the quantity consumed per capita is not large. Chocolate, an aboriginal drink, has never been common with the majority of the population because of its restricted cultivation and comparatively high cost. There are many other food drinks and cool soft drinks (among which Coca-Cola has had an enormous increase in popularity in recent years), but they do not compare with those mentioned above.

Much has been written about pulque as the national intoxicating drink of Mexico. It is not and never has been the principal alcoholic drink of the majority of the Mexicans. Prehistorically fermented maize drinks were more widely spread and were more consumed. At present in Quiroga there is a slight consumption of pulque in season, but a number of other alcoholic drinks are more important. The leading intoxicating drink in Quiroga and in all of Mexico at present is European-style beer, as distinguished from native beers made from maize. In the early 1820's there were no breweries in Mexico; now there are more than 20 large breweries, and beer of many types and prices is available in all but the most remote and smallest communities. Most of the beer consumed in Quiroga is in bottled form, from breweries in the Federal District, Orizaba, and Monterrey. Dark beers such as Corona Negra and XX are preferred, but there is a fair consumption of light Corona, Carta Blanca, etc. Wines are not important in Quiroga. However, the term wine (*vino*) is applied to the distilled product of the agave. This *vino de mescal* (which includes tequila, bacanora, and other mescals from specific areas) is not locally so popular as a number of drinks made by distillation of brown sugar, molasses, and cane juice. The most popular "hard" drink in Quiroga is *charanda*, a colorless drink of high alcoholic content made in one distillery in Uruapan from fermented brown sugar. However, the term *charanda* is commonly applied to similar drinks

other than the one with this trade-mark. There are a number of other intoxicating drinks (such as *garapiña* or *tepache* from pineapple juice, *colonche* or *telonche* from the juice of cactus fruits), but they are of minor importance. The whole matter of intoxicating drinks in this area and elsewhere in Mexico has been much confused by changes in nomenclature, both in time and in space. A whole monograph could be devoted to this subject alone.

Tobacco is easily the leading drug stuff consumed in the Quiroga area, although most of its present use is neither as a medicine (as in part of colonial times) nor as a ceremonial item (as in prehistoric times). Judging by the remains of pipes, the inhabitants of the Tarascan area were the greatest users of tobacco (at least in pipes) in Mexico prehistorically. At present there is no pipe smoking in Quiroga, and the leading use of tobacco is in cigarettes. During the nineteenth century cigarettes were made commercially in Quiroga, but now the majority consumed are imported from the great factories in Irapuato and Mexico City, and to a lesser extent from Zamora, Morelia, Guadalajara, etc. The poorest individuals still roll their own cigarettes, but such brands as Tigres, Luchadores, Faros, and Quintos are cheap enough for most smokers. The smoking population includes practically all adults (both males and females) and a large proportion of the adolescents. Many of the smokers, especially the women and the older men, light cigarettes by moving the cigarettes to the match (conditioned by lighting cigarettes from fires), and hold the cigarette cupped within the hand with the lighted end within (probably a habit induced by the need to eliminate unnecessary use of matches for relighting cigarettes that have gone out). Cigars are rarely smoked; and we saw no use of chewing tobacco or snuff. One booth or *estanquillo* (which also handled soft drinks) had the largest variety of cigarettes (about 18 brands including the more expensive and milder Belmont, Monte Carlos, Bohemios, and Virginias, and the more expensive and somewhat strong Alas, Casinos, Fragantes, Rialtos, Elegantes, Cumbres, Delicados, etc.), but the cheap and strong cigarettes mentioned earlier were handled in nearly every grocery store and *tendajón*. Small boxes of single and double-ended wax matches (*cerillos*) are most commonly carried by smokers. For a pipe smoker these *cerillos* do not prove very satisfactory.

So far as we could tell there was little or no smoking of marihuana, and no use of *toluache*, *peyote*, opium, and the like. The most popular commercial drugs were of the aspirin family, such as Mejoral, Cafiaspirina, Roberina. In summary, the most popular stimulants and narcotics were tobacco, coffee, beer, and sugarcane *aguardientes*. In most cases these items were used with moderation.

DRESS

The dress is predominantly European, and very few items can be considered as of Indian origin although a number of European garments had their prehistoric Indian equivalents. The main differences in dress within the Quiroga area are conditioned by wealth and occupation rather than by habitat and race. The poorer people of Quiroga town dress about the same as do the majority of the inhabitants of the ranchos. There is evident more conservatism in dress among the men than women. This is illustrated by the fact that an Indian woman from Santa Fe or Tzintzuntzan can almost always be distinguished from the women of Quiroga by her garb, but a farmer or *campesino* dresses about the same whether he is from Sanambo, Quiroga, or Santa Fe.

Some idea of basic dress complexes can be obtained from the results of the 1940 census. In this census *traje completo* or *vestido completo* means that the men commonly wore coat and trousers (not necessarily matched), and the women usually wore a one-piece dress (anything from a "Mother Hubbard" to a well-fitted dress). *Pantalón* is used for the men and youths who habitually wear trousers but not coats. *Calzón* applies to the men and boys who usually wear the traditional white "pajama" trousers of white or unbleached muslin (*manta*). Apparently *enaguas* and *falda* were used synonymously and apply to the women and girls who wear some sort of skirt with a separate blouse. This combination is at present typically Indian and rural, although found among mestizas and whites and in urban areas. *Bata*, *camisa*, and *envuelto* are used for the various clothes (wrapper, shirt, swaddling clothes) worn by babies and small children of both sexes. *Overal* and *oberol* are used for the men and boys

who have taken over the overalls (with and without bib) so characteristic now of the unionized workmen in urban areas of Mexico. Footwear is divided into three classes: bare feet or no customary use of footwear (mainly women and children); sandals (*huaraches*) worn only by men and boys; and shoes (*zapatos*) of all types, worn by women, men, and some children. The 1940 census records only the diagnostic elements of dress given above, which are considered to be the usual everyday wear of the persons censused.

TABLE 34.— *Dress and footwear in the 1940 census*

DRESS IN THE 1940 CENSUS

Division	Traje completo	Pantalón	Calzón	Enaguas	Bata, etc.	Overa
Villa Quiroga:						
Cuartel I	321	201	102	60	17	
Cuartel II	399	224	139	75	16	4
Cuartel III	331	246	113	82	15	7
Cuartel IV	248	208	98	91	12	
Total	1,299	879	452	308	60	11
Ranchos	397	45	420	14	14	
Quiroga area	1,696	924	872	322	74	11

FOOTWEAR IN THE 1940 CENSUS

Division	Barefooted	Sandals	Shoes
Villa Quiroga:			
Cuartel I	38	156	507
Cuartel II	78	194	585
Cuartel III	81	164	549
Cuartel IV	43	163	451
Total	240	677	2,092
Ranchos	122	398	370
Quiroga area	362	1,075	2,462

Since the 1940 census was taken the main change apparently has been an increase in the use of overalls by men and boys in town. We suspect the recorded large number of wearers of shoes. Probably all of the 2,462 owned shoes, but probably a considerable number of such owners (especially among the women) did not wear them commonly around home and only donned them to go "down town," or to town, or on festival occasions. The most common associations are: only men and boys wear *huaraches*, practically all of the wearers of *calzones* are shod with *huaraches*, and the some 200 other wearers of *huaraches* are derived principally from the *pantalones* group; only women and children commonly go barefooted, and most of the women who wear *enaguas* go barefooted; and the use of *calzones* tends to be concentrated in the ranchos and the Calvario district, while *enaguas* are found principally in the Calvario district and among the poorer women elsewhere in Quiroga town.

A typical woman in Quiroga wears as her everyday garb a one-piece cotton print dress, cotton stockings, shoes, and a rebozo. The next most common combination is the foregoing minus the shoes and stockings. In third place is the colonial combination of blouse (with short sleeves more often than sleeveless) or calico waist, full calico skirts (less commonly full woolen skirts), rebozo, and bare feet. Only a few women wear silk stockings, or the black *mantilla* instead of a rebozo. On a few occasions some women and, more commonly, girls will wear the national galaday attire known as the *china poblana*.

The most common male attire consists of a straw hat, serape, white or colored blouse or shirt, dark-colored woolen or cotton trousers, leather belt, and either *huaraches* or shoes. In second place is the *campesino* combination of straw hat, serape, white blouse or shirt, colored *faja* or belt, white *calzones*, and *huaraches*. In third place is the urban or *catrín* combination of felt hat, suit or unmatched coat and trousers, leather belt, shirt—usually white, a tie on occasion, socks, shoes, and anything from a formal overcoat to a serape for protection against the cold. Khaki or buff-colored shirts, trousers, and jackets are popular among those with political or military background or aspirations. Blue overalls in combination with shoes or *huaraches*, felt hat or straw hat, white or colored shirt, and anything from a blanket or serape to a sweater or leather jacket, are becoming rather common in Quiroga as elsewhere in Mexico. The most common straw hat is of the low-crowned type made widely in Michoacán from the Pátzcuaro Basin to Sahuayo. The most popular serape is a locally made black serape decorated with red geometric figures. A few men own *charro* costumes, but only one man commonly wears his outfit, which is the relatively subdued and authentic costume of the rural gentleman of a generation or two ago and not the gaudy and silver bedecked costume of the city dudes which can be seen today in Chapultepec Park on Sundays.

HOUSE FURNITURE

We made little attempt to study house furnishings in the Quiroga area. However, from general

observation we believe that the following inventory of three houses in Quiroga is representative of what obtains in a majority of homes in the area. It must be kept in mind that perhaps a third of the homes, especially those near the center of Quiroga town, are much more elaborately furnished.

House No. 1

Cocina (kitchen):
- 1 *chimenea* (hearth or fireplace) of stones and mud.
- 2 sets of mud-covered *paranguas* (hearth stones).
- 1 *comal* (metal griddle).
- 2 metates with manos.
- 1 *olla* (jar) for *nixtamal.*
- 1 *tascal* (basket for tortillas).
- 1 small *cazo* (copper kettle).
- 1 large *cazo* (copper kettle or cauldron).
- 1 large *olla* for drinking water.
- 1 *canasto* (large basket).
- 1 *trastero* (combination of wooden pegs, shelves, and hooks) with small *ollas,* glass tumblers, *cazuelas* (earthen pans), *platos de sajonia* (chinaware), *platos de barro* (ordinary terra-cotta dishes), spoons.

Sala (combined living room and bedroom):
- 1 wooden bench.
- 3 wooden chairs.
- 1 water pitcher.
- Several brushes.
- 3 *petates* (bed mats).
- Images of saints hung on the walls.
- 1 *alacena* (wall cupboard) with china dishes.
- 1 chest with clothing, etc.
- 7 decorated *bateas.*
- 2 strands of dried cooked maize on the cob.

House No. 2

Cocina:
- 1 *chimenea.*
- 1 set of *paranguas.*
- 1 *comal.*
- 2 metates with manos.
- 2 *molcajetes* (mortars) with pestles.
- 1 *olla* for *nixtamal.*
- 1 *tascal.*
- 1 *olla* for drinking water.
- 1 *canasto.*

Cocina—Continued
- 2 *cazuelas.*
- 4 *ollas* of graduated sizes and many small *ollas.*
- 1 *batea.*
- 4 wooden spoons.
- 1 *molinillo* (chocolate beater).
- 1 *tinajera* (dish rack) with chinaware.
- 4 wooden tables.
- 1 *bote* (5-gallon tin can).

Sala or *pieza:*
- 2 wooden beds with *petates.*
- Wooden pegs on walls, with clothing.
- 2 censers and several pictures of saints.
- 2 axes.

House No. 3

Cocina:
- 1 *chimenea.*
- 1 set of *paranguas.*
- 1 *comal.*
- 1 metate and mano.
- 1 *tascal.*
- 1 large *cazo.*
- 1 large *olla* for drinking water.
- 1 *canasto.*
- 1 *cazuela.*
- Many small *ollas.*
- Chinaware.
- Glass tumblers.
- 1 large wooden spoon.
- 1 salt container.
- 1 aluminum sieve.
- 1 wooden bench.

Sala or *pieza:*
- 2 wooden chairs.
- 1 wooden bed.
- 2 clothing chests.
- 5 images of saints on the walls.
- Leather ropes for yoking oxen.
- 1 *morral* (carrying bag).
- 3 flatirons.

It will be noted that most of the furnishings have to do with preparing food. Furniture for leisurely moments (easy chairs, sofas, bookcases, etc.) is lacking. Possibly a truly typical house would have one small mirror, an oil lamp, brooms, and one bed chamber, besides the items mentioned above.

LEADING PERSONALITIES

So far we have described only the "body" of Quiroga. Some idea concerning the "soul" can be obtained from a list of the natives of Quiroga who have made some mark on the outside world. We do not pretend that our list is complete, but it certainly includes all of the most famous persons. During the colonial period Cocupao produced only one famous or notorious person, Father Antonio Torres, who was born in Cocupao in the second half of the eighteenth century. We know nothing of his early life other than that he was the son of Salvador Torres and was vicar of Cuitzeo de los Naranjos (in Guanajuato) about 1810. He was not a very good priest and was credited with few

ideas, but he became a follower of Hidalgo and of Morelos, and soon was the scourge of southern Guanajuato and northern Michoacán. Father Torres is credited with burning Cocupao in 1811 (he set an example to the townspeople by firing his father's house) so that the royalists could not make use of it. In drunken play he was lanced to death by Captain Juan Zamora about 1817. Colonial Cocupao can claim one other person after a fashion, since the saintly Josefa Antonia de N. S. de la Salud y Gallegos (although born in Tzintzuntzan about 1688) spent most of her girlhood in Cocupao, and it was there that she dreamed that she must dedicate herself to Nuestra Señora de la Salud in Pátzcuaro, to which town she moved, and where she died in 1750 after a very religious life.

Little more is heard from Cocupao until it was surnamed Quiroga, and a number of its natives became noted liberal warriors and workers in the Wars of Reform and the French Intervention. Among the liberal patriots from Quiroga were Juan and Rafael Arellano, Francisco and Rafael Gaona, Rafael Garnica, José María Rojas, Francisco and Primo Serranía, Mariano and Miguel Torres, Joaquín Valdés, and José Jesús Villanueva. Of this group José Jesús Villanueva Barriga (born about 1827, died 1905) was the most famous. He began as a young man by joining the forces of the liberal governor and general, Epitacio Huerta. Villanueva fought for the Plan de Ayutla; rose to the rank of colonel in the war against the French; and early backed the cause of Porfirio Díaz in the troubled 1870's. By the time of his death he was the patriarch of one of the largest and most influential families in Quiroga; was one of the two or three largest landowners; owned two of the distilleries in the area; and was one of the most influential political figures in the State. His is the most imposing monument in the Quiroga cemetery. Rafael Garnica (presumably a native of Quiroga, although claimed by Coeneo) was one of the leading military figures produced in the area. During the period from the 1850's to the 1870's he rose to the ranks of colonel and general, and was one of the most trusted lieutenants of General Huerta (native of Coeneo) and General Pueblita (native of Pátzcuaro).

Among the more recent personalities from Quiroga have been:

Dr. Juan N. Navarro (born 1823, died 1904), claimed by both Quiroga and Morelia; surgeon, politician, poet; consul general of Mexico in New York City from the 1860's until his death.

Macario Torres (born 1853, died 1885); poet and politician, and a leading citizen of his adopted city and state—Valle de Santiago, Guanajuato.

Dr. Nicolás León (born 1859, died 1929); physician; first director of the state museum in Morelia, later affiliated with museums in Mexico City and Oaxaca; leading Mexican anthropologist of his time, great bibliographer, philologist, physical anthropologist, and founder of modern Tarascan studies. The Smithsonian Institution and the Instituto Nacional de Antropología e Historia in 1946 erected a bronze plaque to his memory on the house in which he was born on Zaragoza street in Quiroga.

Dr. Leopoldo Lara Torres (born ca. 1867, died 1940); Roman Catholic priest, and first bishop of Tacámbaro.

Dr. Joaquín Torres (born 1868, died 1916); physician and biologist, affiliated with the Sección de Biología General y Medical of the National Museum in Mexico City.

The brothers Ramón, Vicente, and Francisco Elizarrarás, who ran a printing establishment in Quiroga in the 1860's, and whose publications (especially novels) were widely read in Michoacán.

In addition to the above individuals, Quiroga has produced a number of lawyers, physicians, and clergymen, most of whom have exercised their professions in Morelia, various towns in Guanajuato, and in Mexico City. It is noteworthy that practically no native of Quiroga born during the past 50 years has acquired more than local fame or importance. It would seem as if the intellectual ambient in Cocupao-Quiroga from the 1830's to the 1880's (possibly because of the personalities of certain of the teachers, priests, and patriotic leaders) was much superior to what has obtained more recently.

In connection with the historical portion of our study of Quiroga we worked out genealogical tables for about a dozen families which had contributed most of the leading citizens for the past 90 years. A study of these tables showed that (*a*) the male line of the Torres family had contributed more outstanding persons than had any other one family, and (*b*) by the time of our study these various families were so intermarried that it was difficult to find an individual belonging to one of these families who could not claim some

relatively close degree of consanguinity with practically all the members of the other families. However, some of these families by 1945 had become extinct in Quiroga in the male line; and there were individuals who were unrelated except for marrying women of these families, since this group of leading families was far from endogamous. A brief example of the intermarrying of leading families is provided by the surnames of the spouses of the children of Colonel J. Jesús Villanueva (by three wives):

J. Jesús Villanueva Tovar married María Soledad Villaseñor Ramos.

Federico Villanueva Ortiz married María Guadalupe Torres.

María Jesús Villanueva Ortiz married Crispín Villaseñor.

Rómulo Villanueva married María Rosario Ruiz.

CHRONOLOGICAL OUTLINE

1522–28/29.... Spanish Conquest; Cortez *encomienda.*
1529–1810..... Cocupao tributary to the crown.
1533–35..... Visit of Quiroga; Pueblo Hospital de Santa Fe de La Laguna founded.
1534..... Royal title granted to Pueblo de San Diego de Cocupao.
1545..... Most deadly plague in history of the Pátzcuaro Basin.
1576..... Second most deadly plague in the Pátzcuaro Basin.
1586..... Visit of inspector-general Fray Alonso Ponce to Tzintzuntzan; Franciscan convent in Cocupao probably founded after this date.
1603..... Congregation of San Diego, Sanambo, and Zirandangacho.
1681–82..... Measurement of the legal town site of Cocupao.
1692–96..... Great famine in northern Michoacán.
1742..... Rough census of families by Villaseñor y Sánchez.
1780..... Second greatest snowfall in history of Michoacán; Tzintzuntzan secularized.
1786..... Most severe famine on record for Michoacán. Cocupao secularized.
1803..... Alexander von Humboldt passed through Capula and Pátzcuaro.
1806..... March 25, one of three most severe earthquakes in the area.
1811..... Padre Antonio Torres burned Cocupao to the ground.
1820/25..... *Ayuntamiento* installed in Cocupao.
1822..... Lejarza estimate of population.
Ca. 1831..... Public primary school for boys established.
1833–36..... Cholera epidemic; burying in churches prohibited; revolt.
1837–46..... No *ayuntamiento* in Cocupao.
1842–53..... Juan de Dios Torres parish priest.
Ca. 1843 or earlier. Post office and tax collector's office in Cocupao.
1845..... April 7–8, destructive earthquake.
1850..... New cemetery inaugurated; great cholera epidemic.
Ca. 1850..... Chapel of San Miguel built in El Calvario.
1852..... Cocupao raised in rank to Villa de Cocupao de Quiroga.
1853..... Quiroga area constituted an independent parish.
1854..... General Pueblita pronounced for the Plan de Ayutla in Quiroga.
1854–61..... Military disturbances caused by Plan de Ayutla, Ley Lerdo, 1857 constitution, and reform laws.
1856..... December 29, third greatest snowfall in local history.
1857–58..... Modern water system installed in Quiroga.
1858..... January 1, fountain and statue of America inaugurated in Plaza Principal; June 19, strongest earthquake felt locally cast down upper member of bell tower of parish church.
1859–60..... Civil register initiated; much opposition by local priest.
1860–64..... Period of much construction of streets, bridges, and buildings; first street signs posted; *portales* Hidalgo, Allende, Matamoros completed (1861–62).
1861..... Quiroga expanded westward through acquisition of Plaza Vieja-Atzitzíndaro district.
1862–67..... Period of French Intervention; in Michoacán November 1863 to February 1867. Virulent epidemics of typhus and typhoid.
1863..... May 1, squadron of cavalry raised forced loan in Quiroga to support Republican troops under Colonel Garnica.
1865..... March 13, Republican troops under General Manuel García Pueblita, Colonel Rafael Garnica, and Colonel Jesús Villanueva attacked French troops under Captain Jaime Beguerisse, and after fighting from dawn to sunset gained possession of the town.
1866..... November 25, 20 prisoners were shot by Mexican Imperialist troops in Quiroga.
1867–73..... Second important period of construction; many streets extended and paved; Plaza de los Mártires inaugurated; clock tower begun; bridges constructed in eastern part of town; water system expanded and fountain inaugurated in Plazuela de Mina.
1867–71..... Reregistry of land titles for first time since 1843.
1868–89..... Francisco de P. Plasencia, parish priest.

1868—Public school for girls opened; most exact census up to that time in Michoacán; bandit gangs led by Antonio Núñez and Evaristo Acevedo operated in Quiroga area.

1869–73—Serious epidemics of smallpox and typhus.

1870–76—Period of *pronunciamientos* and general disorder; schools closed in 1870; State imposed municipal government in 1870.

1870—Rebellion in Michoacán; General Epitacio Huerta temporarily disbanded his troops, and colonel Villanueva and 150 infantry took refuge in Cerro Tzirate; general Corello and garrison occupied Quiroga for a time; bandit *gavilla* led by Marcos and Rafael García operated in Sierra Zinciro area to the west.

1870—Law requiring registry of livestock and brands.

1871—Pueblo Nuevo area in eastern Quiroga purchased from the Indians and divided into lots.

1872—Ing. Antonio Linares ascertained elevation of Tzirate to be 3,340 meters. Only one two-story house in Quiroga; most of the roofs of *tejamanil;* before 1861 all roofs had been of *tejamanil.*

1873–77—Legal conflict over Indian hospital La Guatapera.

1874—First eucalyptus planted in Quiroga; Tzintzuntzan incorporated in municipality May 7. Cristero movement started August 2 under Socorro Reyes, who attacked Quiroga with his *gavilla* shouting "Viva la religión; mueran los empleados." General Rafael Garnica captured some of the Reyes band, who were placed in Quiroga prison; September 16 a rescue attack by the Cristeros was beaten off by Quiroga citizens led by Garnica and municipal president Antonio Leal.

1875—Bandit and revolutionary *gavillas* attack Quiroga. State imposed municipal government.

1877—First State exposition in Morelia; Quiroga sent numerous exhibits including locally produced silk, vegetable oils, medicinal plants, handicrafts, archeologic items.

1877–92—Cornelio Medina, teacher in boys' public school.

1877–78—Indian communities officially extinguished in Michoacán; last communal lands allotted in Quiroga.

1878—Telegraph reached Quiroga; Plaza de Gallos installed in Plaza de la Constitución.

1879–84—Water supply system renovated and expanded; fountains installed in Plazuela de Bravo and Plaza de la Constitución; epidemics of fevers and smallpox.

1880—Chapel completed in Caríngaro.

1881—February 7–8, heaviest snowfall in history; temperature down to minus 6° Centigrade.

1883–86—Railroad completed Acámbaro, Morelia, Lagunillas, Pátzcuaro.

1884–1904—Municipal palace under construction.

1887—Daily steamship service begun between Pátzcuaro and Quiroga.

1889–90—State imposed municipal government.

1890–92—Plaza de los Mártires paved.

1892—Famine year.

1893—Telephone replaced telegraph in Quiroga.

1894—Kiosk erected in Plaza Principal.

1895—Clock installed on tower of repaired church of La Concepción of old Indian hospital; municipal offices moved into unfinished municipal building.

1896—Metric system established by law.

1898–1900—El Paladín published in Quiroga.

1900—Plaza de Toros inaugurated; August 14, flood washed away the municipal slaughterhouse which was rebuilt 1901–02.

1901–13—José Otilio Vivanco parish priest.

Ca. 1902–03—Vigas replaced in the *portales;* La Concepción burned.

1906—First local electric plant; first *molino de nixtamal.*

1910–14—Railroad constructed Pénjamo, Zacapu, Ajuno.

1910–28—Period of revolution and anarchy; decline and partial abandonment of Quiroga. The Madero Revolution began, in Michoacán, in 1910 under Escalante in Santa Clara to the south.

1910—Chapel of San Vicente de Paul inaugurated.

1911—June 7, strong earthquake.

1915—Request for restitution of lands made by Indians of Quiroga.

1915–18—Reregistry of land titles; revaluation of rural property.

1917–18—Revolutionary Villista chief Inés Chávez García and his gang raided Quiroga and burned some of the municipal records.

1923—Water system repaired.

1925—Present slaughterhouse inaugurated; first automobile passed through Quiroga.

1926–29—Cristero disturbances; 1927–28, Cristeros under Ladislao Molina and Alfredo Elizondo raided Quiroga and burned records.

1929—Provisional grant of *ejido* to Indians of Quiroga.

1930—State imposed municipal government; in September Tzintzuntzan was withdrawn from the municipality.

1932—Definitive possession of enlarged *ejido* granted; agrarian disturbances. Puente Jiménez constructed.

1933_____ Calzado Ramón Corona paved.
1934_____ Present kiosk in Plaza Principal constructed.
1935_____ Coeducational public primary Federal school established.
1935–37_____ State imposed municipal government; small garrison in Quiroga.
1936_____ Federal medical services inaugurated.
1937–45_____ Agrarian domination of municipal government.
1937–38_____ Highway graded and oiled through Quiroga; first bus line established 1937.
1937– _____ Initiation and growth of Sinarquismo in Quiroga.
Ca. 1937_____ Jacarandas and casuarinas first planted in Quiroga.
1939_____ Commercial chair industry established.
1940–43_____ Revaluation of real estate.
1941_____ Cinema opened in Quiroga.
1942– _____ A dry cycle began in the Quiroga area.
1942_____ Federal electricity commission brought in electricity from Bartolinas plant near Tacámbaro.
1943_____ Ashfall from Volcán Parícutin began to enrich the soil.
1945_____ Quiroga raised from third to second fiscal rank for taxation purposes.
1946– _____ Sector Popular and PAN in control of municipal government; water supply system under repair.
1947_____ *Aftosa* affects cattle of the area.

CONCLUSION

This monograph has been confined primarily to the description of the land settlement, demography, government, and economy of the Quiroga area. Since it is published separately from the reports on the environment or natural landscape and history, conclusions pointing out relationships between the environment and development of human occupation of the area would be out of place. Until more detailed descriptive studies of other Mexican communities and municipalities are available it would be premature to reach any conclusions as to how typical or atypical is the area of our study. We have made a simple descriptive report whose chief values are two: (*a*) detailed information in selected fields, especially in municipal government and in land settlement, and (*b*) illustrations of the variety of sources of information available in and for a Mexican community and some of the uses to which this information can be put. Numerous thin spots and outright gaps occur in the material that we have presented. Some of these lacks represent material presented in the other two parts of our report on the Quiroga area; other weaknesses were recognized while we were in the field, but lack of time forced us to be selective; several lacunae were due to our lack of competence or interest; and, as is invariably the case when one has left the field and has begun to work up the written report, we discovered that we had overlooked several desirable fields of investigation. Our personal conclusion for further work of this type is that a longer field period is advisable, and that a larger group of investigators representing a number of disciplines (e. g., pharmacology, medicine, agronomy, etc.) should be associated in the fieldwork.

Quiroga is lacking or poor in a number of material and cultural elements. Most of these lacks are characteristic of much of Mexico, such as insufficient water, poor soils and denuded lands, depleted forests, too few schools and teachers, low literacy and poor reading habits, poor sanitation and insufficient medical care, too few recreational outlets, and insufficient natural and social resources in general for a proper standard of living. It is to the great credit of the inhabitants that they are as happy, healthy, and progressive-minded as is the case. After our sojourn in Quiroga we have a very deep feeling of affection and admiration for this hard-working and hopeful people. In various parts of this report we have mentioned possible ways for improving or curing undesirable conditions. Most of these suggestions require both money and technical training for execution. The Mexican Government is working for improvement in many lines just as rapidly as financial and human resources allow.

EXPLANATION OF PLATES

Plate 1

The Lake Pátzcuaro Basin from the air. View looking north and east from about 13,000 feet above the terrain. The city of Pátzcuaro lies near the lower right-hand corner. The upper body of Lake Pátzcuaro is the Seno de Quiroga, at the east end of which are the lowlands between Quiroga and Patambicho known as the Llano de Tzintzuntzan. The arrow points to the location of Quiroga in the cove back from the lake shore. The mountain dominating the central peninsula is Tariácuri, east of which is Cerro Yahuarato. Between these two mountains and near the shores of the Seno de Quiroga is Tzintzuntzan. The lake apparently beneath the clouds in the upper right-hand corner is Lake Cuitzeo on the Michoacán-Guanajuato boundary. The lowlands northwest of the Pátzcuaro Basin hold the upper waters of the Río Angulo-Río de la Patera-Zacapu drainage system. All of the *municipio* of Quiroga is visible in the crescent area between Lake Pátzcuaro and the highlands culminating in Tzirate (the mountain mass north of the upper arm of the lake), together with the small part of the municipality which lies outside of the Lake Pátzcuaro drainage to the east of Tzirate.

Plate 2

The highland ranchos of Quiroga. View northward. A portion of the rancho Sanambo is in the extreme lower right-hand corner. The large field-topped hill just left of center is the Cerro Azul, and the smaller hill with a rectangular field on top just to the right of center is the Cerro Irauco. The large mass on the left margin is the Cerro Tzirate. Just below the × at the east side of the dark-colored fan-shaped lavaflow is the rancho Icuácato. The road from Chucándiro to Quiroga can be traced from Icuácato, along the margin of the lavaflow, down to the *plan* and *joya* and rancho of La Tirímicua (××), and off the plate at the left where it skirts the Mesa de Santiago and starts to descend to Quiroga. The ××× mark the location of rancho Caríngaro. The light-colored areas in the middle and foreground represent pastures, cut-over lands, and cultivated fields. The dark lines that wander over the light background represent bands of vegetation—along roads and paths, and along arroyos. The northeastern boundary of Quiroga against the municipality of Morelia has been inked in for a short distance on either side of the volcanic cone above Capula.

Plate 3

The Villa de Quiroga from the air. The Villa de Quiroga is the large settlement in the lower part of the plate. The Pueblo de Santa Fe is at the top. At the second curve in the highway near the left margin (×) is the rancho Patambicho, and near the bottom margin and a little left of center (××) is the rancho Zirandangacho. The Cerro Huarapo is the hill between Quiroga and the lake. The compound delta of the arroyos del Salto and del Pueblo Nuevo is quite evident at the toe of the lake. The nearly straight tree-dotted road which extends left from Quiroga toward the lake (just below the Cerro Huarapo) is the Calle del Muelle or Embarcadero, and forms part of the boundary between Santa Fe and Quiroga.

Plate 4

a, View taken from cultivated field on slopes of Cerro Azul, about 500 meters above the surface of the lake. The central area is occupied by the lower part (*plan* and *joya*) of the hanging valley of La Tirímicua. Some of the house-groups of this disperse rancho are visible. A portion of the lake plain is visible. Quiroga is hidden by the hill (Cerro de la Muñeca) just beyond La Tirímicua. The peninsula in the background is that of Tariácuri or Tzintzuntzan.

b, View from the lower slopes of the Cerro de la Muñeca (about 70 meters above the lake). The eucalyptus and cypress trees of the cemetery dominate the middle foreground. The clock tower of La Concepción church is outlined against the Cerro Huarapo.

Plate 5

a, View slightly north of east of the Villa de Quiroga nestled in its corner or *rincón*. Taken from the Cerro Huarapo. The highest mountain in the background is the Cerro Azul. To the right of the Cerro Azul is the Cerro Irauco; and below and to the left is the Cerro de la Muñeca. The foreground is occupied by a portion of the upper lake plain. The road crossing the middle foreground marks the limits between the Villa de Quiroga and the Pueblo de Santa Fe.

b, View northwest over the Villa de Quiroga from the Cerro de la Cruz. The main paved highway from Mexico and Morelia enters from the right in the foreground. The slight angle in the highway marks the center of town and the juncture of the Pátzcuaro highway (which comes in from the left) with Federal highway No. 4 (Mexico-Guadalajara). The nearer limb of the highway, from the curve to the center of town, is the Calle de Benito Juárez, and the farther continuation is the Calle de Zaragoza. The largest structure to the left of the highway is the parish church. The broad street to the right of and parallel with Benito Juárez is the Calle de Morelos. The mountains in the background form the northwestern limits of the Pátzcuaro Basin.

Plate 6

a, View down Calle Benito Juárez, decorated with colored paper streamers on the Día de la Cruz, May 3. The houses on the left side of the street have uniform facades constructed by the Government after the street was widened by cutting off the front portions

of houses on this side. The painting of the lower portion of the whitewashed fronts with various colors (red, brown, blue, etc.) is shown in all three views on this plate.

b, Food *puestos* at the T-intersection of the highways to Guadalajara (straight ahead down Calle Zaragoza) and Pátzcuaro (to the left down Calle Nacional). *Pozole*, *refrescos*, stewed chicken, and roast pork are for sale in the *puestos*. The three seated women are *tortilleras* with tortillas for sale in the *tascales*. They are dressed in the full calico-print dresses and rebozos characteristic of the poorer women. The crossed sticks above the middle doorway were placed there to hold some paper decorations which have long since blown away.

c, View down the Calle Nacional, toward the exit for Pátzcuaro, taken from the corner opposite the *puestos* shown above. The clock tower is nearly obscured by the first light pole. The two-story structure with the flagpole is the municipal palace. Left foreground contains the fronts of two "curio" stores. The man seated on the edge of the sidewalk wears the normal *campesino* costume of straw hat, white blouse, and white trousers. The trees and group of people are at the front of the market plaza.

Plate 7

The views on this plate show the three principal phases or types of streets in Quiroga—unimproved dirt, cobblestone of the Díaz era, and modern asphalt pavement.

a, The Calle de la Montaña is bordered by a stone wall on the left and an agave hedge on the right. Wheat fields occupy the bulk of the *manzanas* on both sides.

b, The Calle del Abasto Viejo was cobblestoned in the days when the *arrieros* used this route to the nearest point on a railroad some 14 km. away at La Cacana via Zirandangacho. This is an excellent example of cobblestone pavement, with the road inclined from both sides toward the center, and large flat stones used to outline the center stripe. The woman in the distance is making use of the easier walking on these flatter stones.

c, A view up Benito Juárez toward the Cerro de la Cruz. The consistent architecture on the right contrasts with the individuality shown by the older facades on the left. The balconies shown are not part of the normal older architecture in Quiroga.

Plate 8

a, The Calle de Guerrero from its corner with Benito Juárez. The stone sidewalks are of the type found in many of the central streets. Different house ownerships are indicated on the right side by vertical joining "cracks" and by changes in the height and color of the paint on the lower part of the fronts, and also by changes in roof height and pitch. The musicians (hired from a neighboring community) wear *campesino* and also *bracero* clothing (jumper, overalls).

b, The Calle de Degollado clearly shows the central open-gutter type of drainage. Laterals from a number of houses carry sewage into the gutter. This is the only street in Quiroga which has both telephone and light poles. The doorways, house fronts, sidewalk, and paucity of windows are typical. At the upper end of the street is the Plazuela de Nicolás Bravo shown in plate 10.

Plate 9

a, The center of the Plaza Principal occupied by a water fountain or *pila* of cut stone and a column surmounted by a statue of America. The bandstand or *kiosko* is in the background. The large-leafed plant on the right is an ornamental banana. The water level in the *pila* is low and the boy bending over is trying to scoop up water to fill his two *botes*.

b, The front of the Plaza Principal facing toward the point where Zaragoza and Benito Juárez merge and intersect with Nacional. Part of the Portal Hidalgo shows at the left, and one of the donated and inscribed cement benches or *lunetas* is near the center front. At the right is the semipermanent stall or booth of a vendor of soft drinks and tobaccos. The larger trees are ashes (*fresnos*). The individuals show a melange of dressing styles—most curious being the man with an award sweater (year bands but no letter) but otherwise *campesino* dress.

c, A group of nearly typical *campesinos* (with serapes, carrying bags, *petates*) awaiting a bus in the exact center of the busiest street intersection in Quiroga. The Plaza Principal is in the background.

d, The main *alcantarilla* and *pila* in the Plazuela de Valle. A dry-goods store or *cajón de ropa* is in the background. The trees by the *pila* are jacarandas. Girls are getting water in *ollas* and *botes*.

e, The Plazuela de Mina on the left side of the Calle Nacional on the way out toward Pátzcuaro. This is always the first fountain to go dry in Quiroga. The trees are ashes.

Plate 10

a, The Plazuela de Nicolás Bravo (former Plazuela de Degollado and de los Naranjos) is located back of the church of La Concepción and at the intersection of several streets. The water *pila*, partly hidden by an ash stump, is being approached by a water-carrier. The houses in the background, in *manzana* 1 of *cuartel* I, have stores in the front rooms and are the homes of some of the wealthiest merchants in Quiroga. The trees near the *pila* are jacarandas.

b, The large domed structure of brick and stone is an *alcantarilla* or water tower which feeds the local *pila* and also a number of other fountains downtown. The four girls are indulging in some gossip while getting water for use in their homes. The *olla* is more commonly used than the bucket. The two girls at the left have the more typical dress.

PLATE 11

a, In the center is a house group belonging to a family in the Rancho de Icuácato. Both houses have walls of stone, logs, and poles, and the roofs are thatched with local grasses. To the right of the houses are the remains of a small corral for burros. This type of house is typical of the poorer families in the ranchos.

b, One large patriarchal family inhabits this house group in the Rancho de la Tirímicua. This type of nearly square and basically wooden house is known as a *troje*, although the tile roofs are replaced by shakes in true *trojes*. The second house from the right has the hewn planks of a true *troje*, while the others are a composite of partly shaped logs, barked logs, adobes, etc. The corncobs heaped in front are used as fuel.

c, This second house group in La Tirímicua displays a common diversity in materials and form. The house on the left has a thatched roof of four slopes and that on the right has but two *aguas*. The walls are a combination of dry stones, stones in adobe, logs, poles, and planks. The cloth and poles in the right foreground are protecting a *chayote*.

PLATE 12

a, This *jacal* or barn near the Rancho de Atzimbo illustrates the structures built on a few of the larger farms. The open-work arrangement of the adobes should be noted.

b, A fairly typical patio or open backyard on the periphery of Quiroga in the Barrio del Calvario. In the foreground a hen and some chickens are foraging; on the far side of the patio some *bateas* with freshly applied *maque* are drying in the sun; and a woman is examining the hair and scalp of a youngster for lice. The houses shown belong to three related families.

c, A *portón* with tile roof, adobe pillars, and double swinging gate at the entrance to a maize field in La Tirímicua. At the left is part of a large yucca just beginning to flower. This is an unusually well-built *portón* for the ranchos and is more like the type encountered in town.

d, This *portón* of timbers with a shake roof, and with a single *puerta de golpe*, in Sanambo is of the type most common in the ranchos. The walls or fences of crudely piled dry stones are typical.

PLATE 13

a, The eastern, or Pueblo Nuevo, district of Quiroga viewed from the bell tower of the parish church. The municipal cemetery, marked by a large white gateway at the juncture of two walls, is in the middle background. The L-shaped building with a white tower at one end is the chapel of San Vicente and associated structures. Several walled patios with fruit and ornamental trees can be seen.

b, The unpaved extension of Calle Salazar eastward toward an arroyo which flows into the Arroyo del Pueblo Nuevo. Five families inhabit the three structures shown. The adobe wall is topped with growing grass, which is a rather common topping. In the previous picture most of the adobe walls are protected by tiles. In other cases pitahaya cactus is planted on the walls, and the cactus both protects the wall against erosion and discourages over-the-wall visitors.

PLATE 14

a, The ornate front of this house is characteristic of the homes of some of the wealthier merchants and landowners. The windows are of wood, with iron grills or *rejas* in the lower portions. The sidewalk is of large bricks. It will be noted that the house number has been changed from 14 to 24 (on the Calle Iturbide). The large doorway is the entrance to a *zaguán*, or hall, and the large door contains a smaller door which is the one most commonly used.

b, The large building marked Hotel, in three places, is on the corner of Benito Juárez (upon which it fronts) and Guerrero. It is most commonly known as the Posada Escobedo, and the swinging sign above the front entrance, or *zaguán*, carried this name until it was shot up by some "drunks" during our stay in Quiroga. This building in the previous century was the home of one of the wealthiest men in Quiroga, and was the finest private home in town. Now it contains, in addition to the hotel rooms on the upper floor, a small store on the corner, a shoemaker's establishment in the room just to the left of the hotel entrance, a butchershop where the flag is displayed, and a *fonda* (restaurant, cafe) in a room entered by the last two doors. Whenever fresh meat is available a red flag is displayed in front of a butchershop. A favored location for stores is on corners where the one room of the store is entered by two, three, or four closely spaced doors.

PLATE 15

a, Interior patio in the Posada Escobedo. This patio is practically in the same condition as when the building was a private home, and serves to illustrate what lies behind a number of the unprepossessing house fronts. There are a number of patios in Quiroga which are richer in potted flowers and ornamental shrubs. However, the frogs decorating the center of the *pila* are unique in Quiroga. Most of the potted plants visible are pelargoniums and begonias.

b, This corner is at the intersection of Benito Juárez and Guerrero on the south side of Benito Juarez. As the sign indicates, this structure is in the first block (*manzana* 1 ª) of the first quarter (*cuartel* I ª) of town, and the street that goes by is the Avenida B. Juárez. The store which occupies the corner room has the address of (Juárez) 8. The signs are typical, especially those of the painkiller Mejoral and of Cumbres cigarettes. The lower sign advertises a soccer (Fut-Bol) game between the Nevado team of Pátzcuaro and the local Vasco de Quiroga team. The recently laid asphalt sidewalk is in visibly poor condition.

PLATE 16

a, A wooden plow.

b, The first plowing (in this case for maize), in a field near Zirandangacho. The plowman is carrying an ox goad.

c, The second plowing, or *cruza*, which is crossing the furrows of the first plowing at an angle. This field is on the water divide between the Pátzcuaro Basin and the small undrained basin to the north—in the background. The jumper worn by the man is the only exotic element in the scene.

PLATE 17

a, The bundles or shocks of wheat are tied with some knotted lengths of wheat straw. This scene is near Zirandangacho.

b, Winnowing *habas* near La Tirímicua. The broadbeans were threshed by horses as shown in plate 19.

c, The cut maize plants or *rastrojo* are often stored on such platforms above the reach of livestock.

d, The tall slender plant next to Corona Núñez is *teosinte*—a rather common weed in this field near the Cerro Huarapo. The other "corn plants" are genuine maize.

PLATE 18

a, Harvesting or *piscando* maize in a lowland field. The ears are ripped and broken out of their husks with the aid of a husking tool, and then are dropped in the *ixtle* harvesting bag. The weedy tangle in the cornfields at harvest time is characteristic. Small wild sunflowers are the most obvious weeds in this view.

b, The wheat is cut with a sickle which usually has small saw teeth. This back-breaking method of reaping is practically the only one used locally for wheat. The reaper in the foreground is typically attired from *huaraches* on his feet to old straw hat.

PLATE 19

a, Threshing wheat on an earth-bottomed threshing floor at the margin of a field on the slopes of the Cerro de la Muñeca above Quiroga. Mules and horses are being used here, but commonly only horses are employed.

b, Threshing *habas* on the slopes of the Cerro Azul above the Plan de la Tirímicua. The sacks at the left contain winnowed broadbeans. The direction of movement of the animals is changed from time to time so that they will not become dizzy.

PLATE 20

a, *b*, *c*, Stages in converting oak wood into charcoal high on the slopes of Tzirate. First (*a*) large logs are piled; then (*b*) smaller sticks complete the wood pile; and lastly (*c*) the pile is nearly covered with earth and a slow smouldering fire is started which chars but does not get enough oxygen to fully burn the wood.

d, The side of a resinous pine is barked, scraped, and scarred to stimulate the flow of resin. Then slabs or *pencas* of the permeated wood are cut out and split into splinters which are sold as *ocote* wood for kindling fires, for house illumination, and as torchwood in general.

e, A log or pole fence of a type common in the wooded highlands. Pine, oak, *tejocote*, and madroño are most used for fences in the order mentioned.

f, Cut tules and some bundles or *manojos* of tule ready to be carried in to Santa Fe for making *petates*. The scene is that part of the lake shore closest to Quiroga.

g, A large white *zapote* by the roadside in Quiroga.

h, A very large and old avocado tree in the Calle del Aguacate to which it has given its name.

i, A large *tejocote* or hawthorn tree on the Mesa de Santiago.

PLATE 21

a, Out of each slab or *penca* is made one rough *batea*. The wastage in the log is evident.

b, Crude *bateas* have been adzed out and planed off at this foot-of-the-tree (*al pie del árbol*) location. The two *bateas* shown are rejects. The mass of chips and shavings is wasted since such material practically never is taken home or to town to be used as fuel.

c, The women who applied the *maque* to the *bateas* did not want their pictures taken, so this is the best picture we have of the process of applying the black and red slips.

d, This little girl, clad in a one-piece slip, has been grinding the earths (the clods in the *bateas*) used in making the *maque*. The milling stones are at her feet.

PLATE 22

a, *Bateas* (size *cuatro*) with black *maque* drying in the sun.

b, Burnished and lacquered black *maque bateas* drying on a sidewalk. Note the ripple effect left by the adz marks.

c, Distinctive *bateas* made by M. Valdovinos and his wife, in the Barrio del Calvario. In the back row, from left to right, the sizes are *á cuatro*, *á cuatro*, *á tres*, and *á cuatro;* in the front, the *batea* on the left is *chuchería* size, and the one on the right is *á tres*.

d, This type of stall or booth for the sale of local handicraft "curiosities" is known as a *puesto*, *expendio*, or *venta de curiosidades*. *Bateas*, chairs, and turned-wood items make up most of the stock.

PLATE 23

a, This display of *bateas* in the Plaza de los Mártires, shows several of the decorative styles, including the combination of birds with flowers. The ripple effect has been accentuated by the lighting conditions that obtained.

b, *c*, A painted chest (*baul* or *petaca pintada*) of a type no longer made in Quiroga. This chest belonged to the grandmother of Don Jesús Gutíerrez Barriga (shown in *b* with his two daughters). The arrangement of the potted flowers is characteristic of the inner patios in the homes of the wealthier people of Quiroga.

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d, This display of painted pottery is outside of one of the leading curio stores in Quiroga. Most of the items were made in neighboring Santa Fe although some of the Santa Fe pottery is painted in Quiroga.

PLATE 24

a, *Chamaco*-size chairs, with the wooden parts painted red, drying in the sun in front of a paintshop (*Taller de pintura*) on Calle Salazar. The house front and street are quite typical of the older portions of downtown Quiroga (El Centro). The joining line and the change in roof structure indicate that parts of two houses are shown.

b, Three women decorating chairs. The location in a corridor or veranda on one side of a patio is characteristic. The pots or *macetas* holding the pelargoniums are somewhat larger and better than the average.

PLATE 25

a, José Corona Núñez (left) and the postmaster Don José Medina Gaona (right) seated in *costurera* chairs and holding *juguete* chairs. The two chairs in front are *chiquito de niño* in size, and back of these are two *chamaco* chairs.

b, From left to right the chair sizes are *juguete, chiquito de niño, chamaco,* and *costurera.*

c, *Juguete* chairs, some painted red and others blue, drying in the sun. After the background paint is dry the chairs are decorated.

d, *Mesera tosca* chairs, painted black, drying on the sidewalk in front of a paintshop.

PLATE 26

a, The tule mat or *petate* section in a Sunday market. The *petateros* are lined up along a wall of the parish house or *curato* which forms one side of the Plaza de los Mártires. Most of the *petate* sellers are from nearby lake villages. The trees are privets.

b, Part of the vegetable section in the Sunday market. A butchershop and a private home are in the background. The two women selling vegetables are from Santa Fe. The vegetables displayed are turnips, tomatoes, onions, cabbage, lettuce, carrots, and beets. The woman at the left front is a purer Indian type than the other. The partial curtains in the two windows are of the type ordinarily found in houses having glass windows.

PLATE 27

a, Dried chiles, tunas, tomatoes, and other vegetables displayed on *petates* in the market. The costumes are typical excepting those of the man and boy at the upper right (a municipal employee and his son).

b, Most of the pottery displayed in the Quiroga market comes from Tzintzuntzan and Santa Fe. The woman in the left foreground wears characteristic mestizo costume of rebozo, calico print dress, dark cotton stockings, and shoes, while the next woman to the right is typically Indian in dress from bare feet to the type of rebozo worn.

PLATE 28

a, *Campesinos* contemplating the baked agave (*mescal*) resources of the market. Two of the baked "cabbages" are visible between the second and third man from the right. The fourth man is holding a *morral.* The first three men on the right probably have on their "Sunday-best" clothes.

b, An Indian woman with *mescal* for sale from the Tzintzuntzan area. Note the manner of carrying a child on the back, within the rebozo. The man at the left is the owner of one of the pool halls, and is a good representative of the merchant class.

PLATE 29

a, The one gasoline station in Quiroga is situated in a corner of the Portal Matamoros. A freight truck (*camión de carga*) is parked by the gasoline pump. The lettering at the top of the cut advertises Mexolube, a lubricating oil produced by Pemex (the Government petroleum corporation). In the left background is the Portal Hidalgo and part of the Plaza Principal. The hour is shortly after sunrise on a winter morning, and there is a "nip" in the air. The water carrier is swathed in a store blanket, and the *campesino* with whom he is conversing has a locally made *cobija.* The man at the right is a transient dressed in "city clothes" (*catrin*). He and the girl (dressed in print dress, rebozo, and high-heeled shoes) are waiting for a bus to Morelia.

b, The horse has brought part of an ox, just butchered in the *abasto* several blocks down the street, for delivery to a nearby butchershop.

PLATE 30

a, This oxcart is of a modern type. The old-fashioned solid-wheeled carts apparently no longer exist in the area.

b, While the bus is stopped and new passengers are seeking admittance other passengers get out to buy a snack—*tacos*, tamales, etc. This is a second-class bus on the Mexico City to Guadalajara route, and originates in Jalisco, as indicated by the name "Zapotlanejo."

PLATE 31

a, The rural Federalized school "Redención" is really a suburban school in the Barrio del Calvario. The pupils are children of the local *ejidatarios.* This school occupies the renovated chapel of San Miguel which was constructed in 1850.

b, The downtown or urban school (Federal primary school "Miguel Hidalgo") occupies rented quarters on the Calzada Ramón Corona a half block from the Plaza Principal. Note the changes in the house number. The sidewalk is of brick.

PLATE 32

a, Two *batea* dancers looking at a catherine wheel which will be ignited later on this day of Corpus Christi. The two top *bateas* on the back of the central figure carry exotic landscape decorations, and four other decorative styles are represented. The dress of the *batellero* on the left is not authentic in the blanket and trousers.

b, A catherine wheel (showing method of suspension), and a study in juvenile curiosity, clothing, and physical types.

PLATE 33

a, Part of the barrier which outlined the walk from the Calle Nacional to the west or side entrance of the parish church on Corpus Christi. The barrier consists of henequen cordage supporting crossed cattails with orchids tied at each intersection. The municipal palace is in the background. The little girl was an unposed but welcome addition to the photograph.

b, The bell tower of the parish church lost its upper member in an earthquake of nearly a century ago. The entrance to the church atrium from the Plaza de los Mártires is between the two pillars.

PLATE 34

a, The chapel in Atzimbo is the oldest of the chapels in the ranchos of Quiroga. Also, it is the most ornate chapel, although the chapel in Sanambo is larger.

b, Six little girls of a poor family of share croppers in La Tirímicua. They are pathetically poor and unschooled, with little hope for any improvement in life. They were too shy to look at the camera, but looked toward a neighbor woman for comfort and assurance.

PLATE 35

a, The sober facade of the parish church as seen through an aisle of ash trees from the atrium of the church. The atrium was the site of the old cemetery, but practically all of the grave markers have been removed or covered over.

b, A bronze plaque in honor of one of Mexico's greatest anthropologists (Nicolás León) was installed in February 1946 on the front of the house in which he was born. Attending the ceremony were children and grandchildren of Dr. León, several of whom are shown under the plaque (together with the author).

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In Morelia

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this material in the archives of the Departamento Agrario in Mexico City, where copies of all such material are kept.)

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MICHOACÁN.

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PLATE 1.—**Lake Pátzcuaro Basin from the air.**

(For explanation, see p. 232.)

PLATE 2.—**The highland ranchos of Quiroga from the air.**

(For explanation, see p. 232)

PLATE 3.—**The Villa de Quiroga from the air.**

(For explanation, see p. 232.)

PLATE 4.—**Landscapes.** *a*, View over La Tirímicua toward Lake Pátzcuaro. *b*, View over the *panteón* toward the lake.

(For explanation, see p. 232.)

PLATE 5.—**Landscapes.** *a*, The Villa de Quiroga from the southwest. *b*, Quiroga from the southeast.

(For explanation, see p. 232.)

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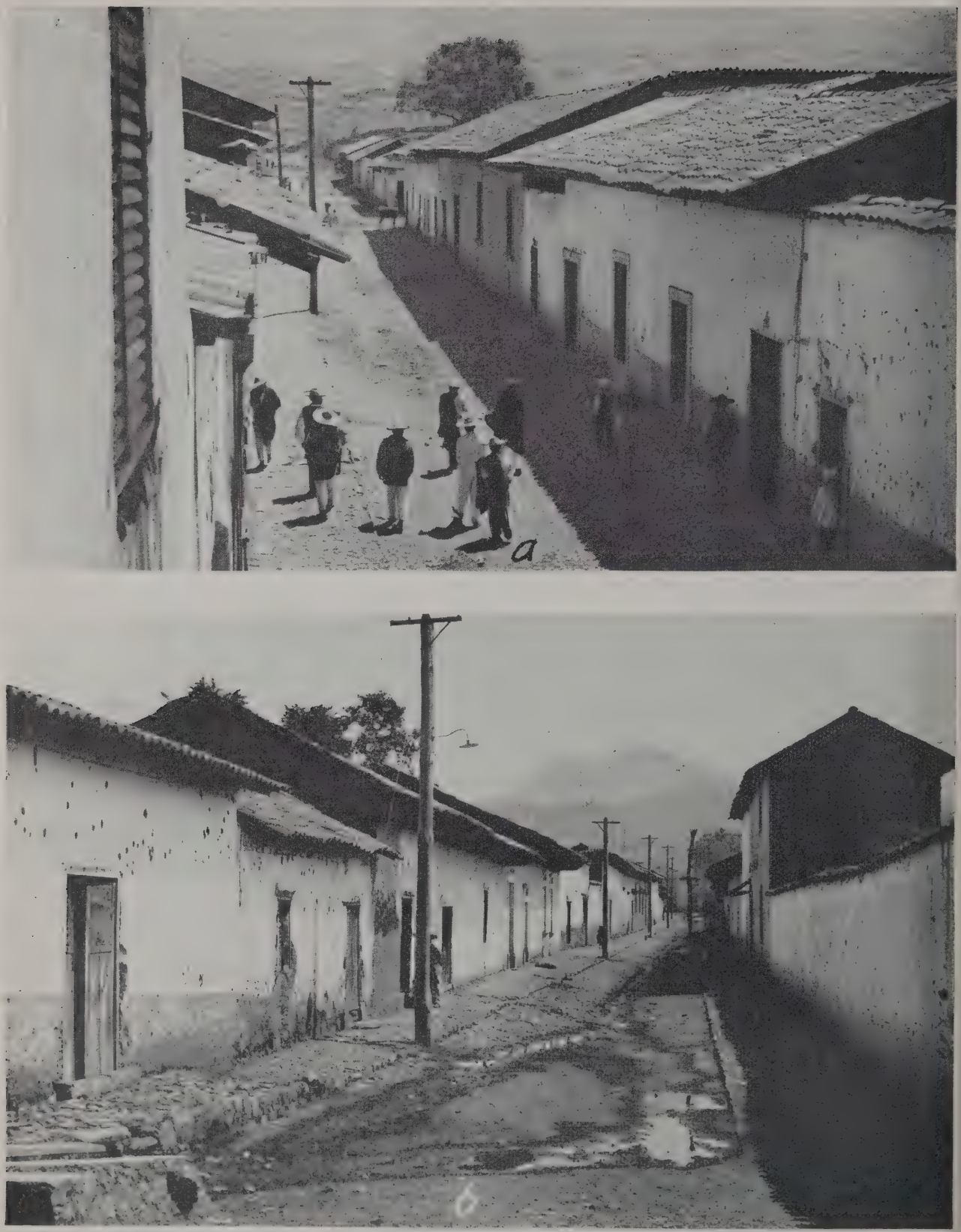
(For explanation, see p. 233.)



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(For explanation, see p. 233.)

PLATE 9.—**Plazas and water supply.** *a*, Statue of America in the Plaza Principal. *b*, Front of the Plaza Principal. *c*, A group of men in the exact business center of Quiroga. *d*, The Plazuela de Valle. *e*, The Plazuela de Mina.

(For explanation, see p. 233.)

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(For explanation, see p. 233.)

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(For explanation, see p. 234.)

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(For explanation, see p. 234.)

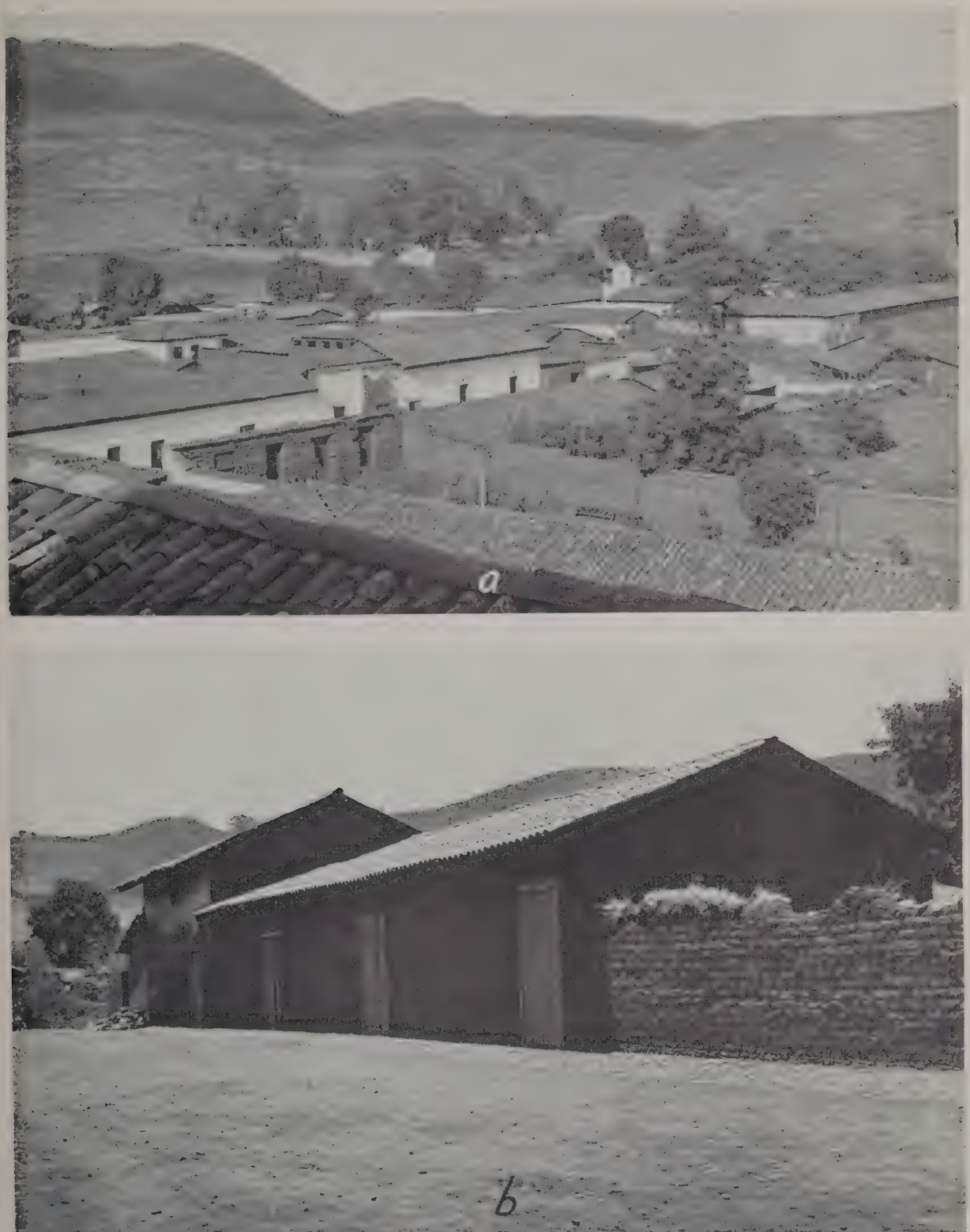


PLATE 13.—**The Pueblo Nuevo district of Quiroga.** *a*, View showing roofs, patios, and walls. *b*, Houses fronting an unpaved street in Quiroga.

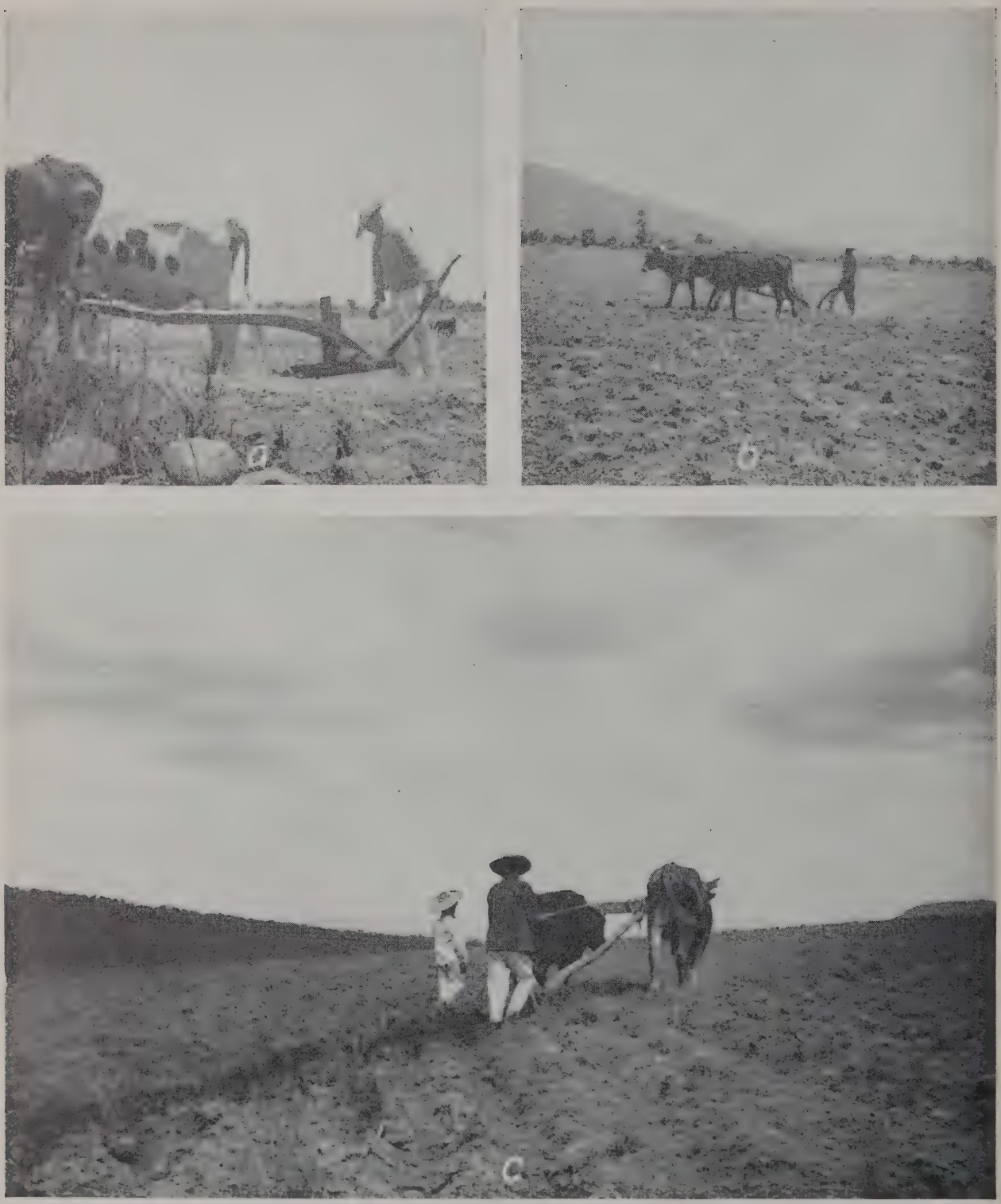
(For explanation, see p. 234.)

PLATE 14. **"Upper-class" houses in "El Centro" district of Quiroga.** *a*, Ornate facade of a downtown house belonging to a wealthy landowner. *b*, The Hotel or Posada Escobedo.

(For explanation, see p. 234.)

PLATE 15.—**Patio and street corner.** *a*, Interior patio of the Posada Escobedo. *b*, Corner with typical signs.

(For explanation, see p. 234.)



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(For explanation, see p. 235.)

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(For explanation, see p. 235.)

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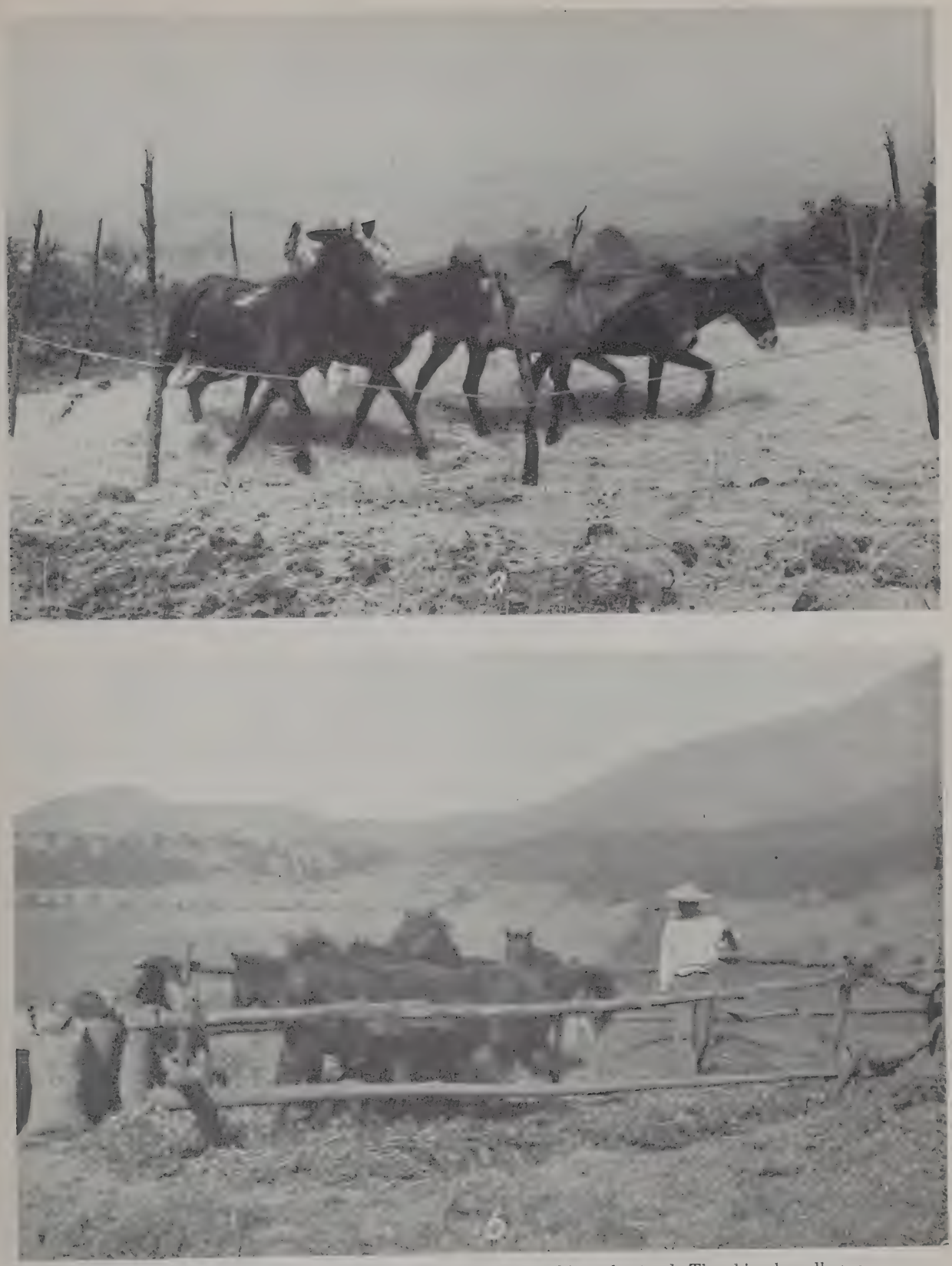
(For explanation, see p. 235.)



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(For explanation, see p. 235.)

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(For explanation, see p. 235.)

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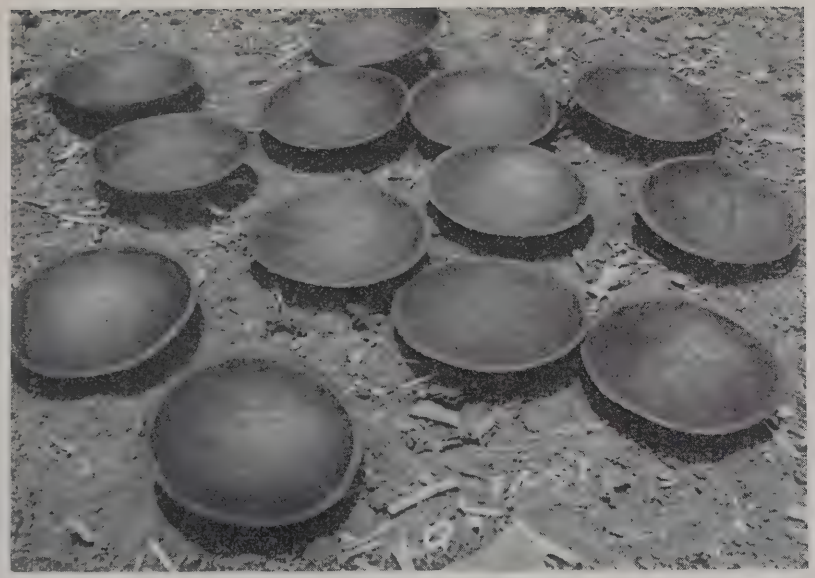
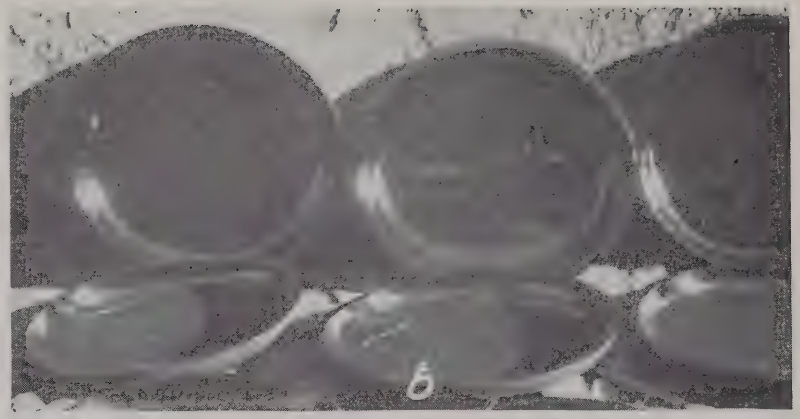
(For explanation, see p. 235.)





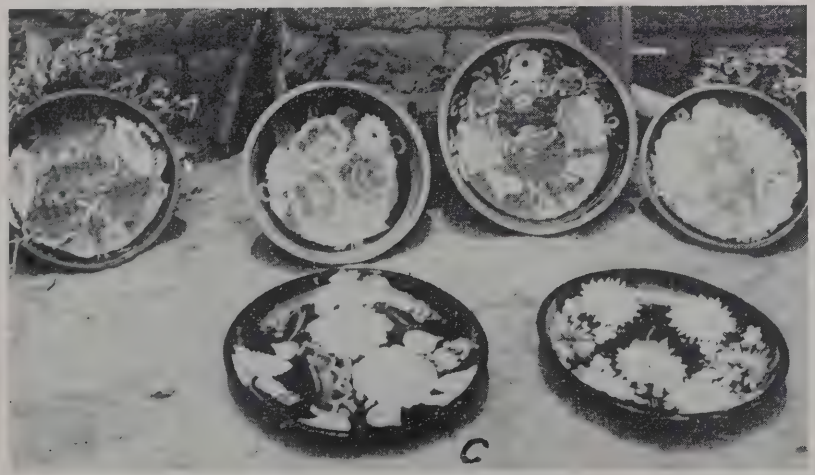
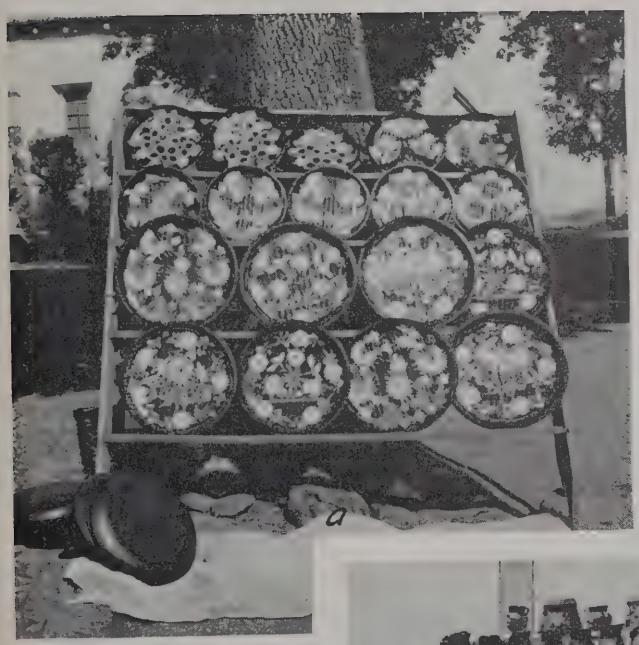


PLATE 22.—***Bateas* with *maque* and finished *bateas*.** *a*, *b*, Slipped *bateas* drying in the sun. *c*, Finished *bateas*. *d*, A *puesto* or *expendio* of local *curiosidades*.

(For explanation, see p. 235.)



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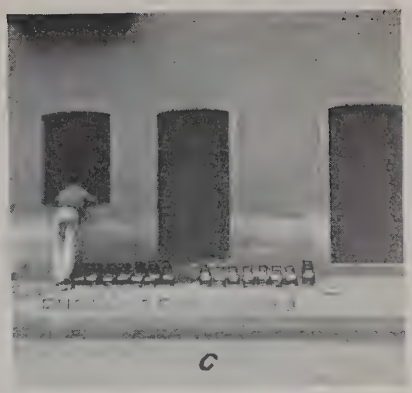
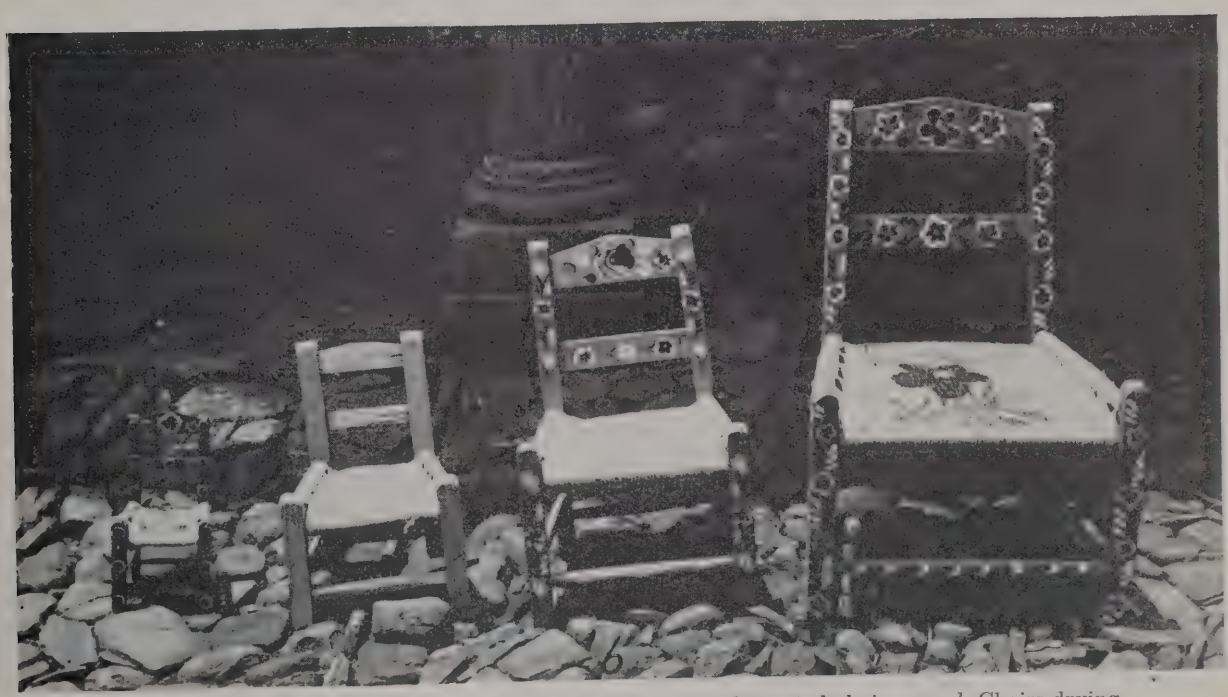
(For explanation, see pp. 235-236.)

PLATE 24.—**Drying and decorating chairs.** *a*, *Chamaco* chairs drying in the sun. *b*, Decorating chairs.

(For explanation, see p. 236.)





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(For explanation, see p. 236.)

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(For explanation, see p. 236.)

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(For explanation, see p. 236.)

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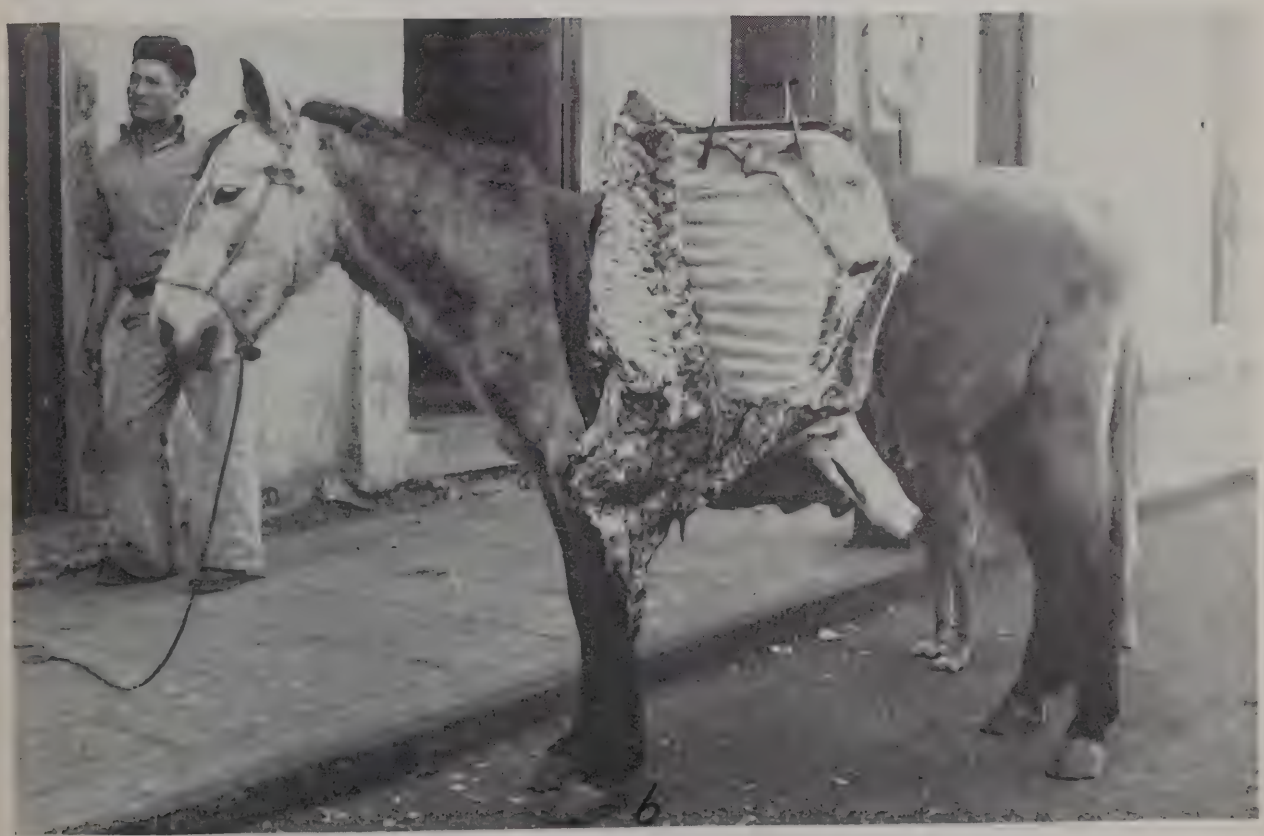
(For explanation, see p. 236.)



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(For explanation, see p. 236.)

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(For explanation, see p. 236.)

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(For explanation, see p. 236.)

PLATE 32.—**Corpus Christi *batea* dancers and catherine wheels.** *a*, *Batea* dancers and catherine wheel. *b*, Catherine wheel.

(For explanation, see p. 237.)

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(For explanation, see p. 237.)

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(For explanation, see p. 237.)

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(For explanation, see p. 237.)

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